

SONY

DAT DUAL DECK EDITOR

PCM-E7700



DATStation

OPERATION AND MAINTENANCE MANUAL

For the customers in the U.S.A.

WARNING

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC rules.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: Using this unit at a voltage other than 120 V may require the use of a different line cord or attachment plug, or both.
To reduce the risk of fire or electric shock, refer servicing to qualified service personnel.

For the customers in Canada

This apparatus complies with the Class A limits for radio noise emissions set out in radio interference regulations.

Pour les utilisateurs au Canada

Cet appareil est conforme aux normes Classe A, pour bruits radioélectriques, spécifiés dans le Règlement sur le brouillage radioélectrique.

Bescheinigung des Herstellers

Hiermit wird bescheinigt, daß die DAT-Doppel-Fernbedieneinheit PCM-E7700 in Übereinstimmung mit den Bestimmungen der BMPT-Amtsblatt Vfg 243/1991 und Vfg 46/1992 funkenstört ist. Der vorschriftsmäßige Betrieb mancher Geräte (z.B. Meßsender) kann allerdings gewissen Einschränkungen unterliegen. Beachten Sie deshalb die Hinweise in der Bedienungsanleitung. Dem Bundesamt für Zulassungen in der Telekommunikation wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Sony Deutschland GmbH
Hugo Eckener Str 20
50829 Köln

Hinweis

Gemäß der Amtsblätter des BMPT Nm. 61/1991 und 6/1992 wird der Betreiber darauf aufmerksam gemacht, daß die von ihm mit diesem Gerät zusammengestellte Anlage auch den technischen Bestimmungen dieser Amtsblätter genügen muß.

このマニュアルについて

本書の目的

本書は、PCM-E7700のオペレーション アンド メンテナンスマニュアル パート2です。

本書は、サービスエンジニアの方々にご使用いただくことを想定し、これらの機種種の部品レベルまでのサービスを前提とした情報(回路図、マウント図、詳細パーツリスト等)を記載しています。

構成

本書の構成を把握していただくために、全章の概略を以下に説明します。

オペレーション アンド メンテナンスマニュアル パート2

第1章 サービスインフォメーション

電源ヒューズの交換、補修用部品注意事項について説明しています。

第2章 メカデッキの交換および調整

メカデッキAssyおよびメカデッキ部品(定期交換部品)の交換方法、調整方法について記載しています。

第3章 電気調整

ADA-31基板を交換した際に必要な調整について記載しています。

SECTION 4 BOARD LAYOUTS

マウント図、部品の基板アドレスを記載しています。

SECTION 5 SCHEMATIC DIAGRAMS

回路図を記載しています。

SECTION 6 SEMICONDUCTOR PIN ASSIGNMENTS

使用半導体の標準図を記載しています。

SECTION 7 SPARE PARTS

分解図・メカ部品表、電気部品表を記載しています。

オペレーション アンド メンテナンスマニュアル パート1(PCM-E7700に付属しています)

第1章 取り扱い操作

第2章 設置

第3章 サービスインフォメーション

第4章 定期点検及び保守

SECTION 5 BLOCK DIAGRAMS, DESCRIPTION
AND FRAME WIRING

SECTION 6 SPARE PARTS

MANUAL STRUCTURE

Purpose of This Manual

This manual is PCM-E7700 Maintenance Manual Part 2.

This manual describes the information items (adjustments, board layouts, schematic diagrams, detailed parts list, etc.) that premise the service based on parts.

If this manual is required, please contact to Sony's service organization.

Contents

The following are a summary of all the sections for understanding the contents of this manual.

Operation and Maintenance Manual Part 2

SECTION 1. SERVICE OVERVIEW

Describes power fuse replacement and precautions for repair parts.

SECTION 2. REPLACEMENT AND ALIGNMENTS OF MECHANICAL DECK

Describes how to replace the assembly and the parts of the mechanical deck that should be replaced periodically and how to adjust them.

SECTION 3. ELECTRICAL ALIGNMENTS

Describes adjustments required when ADA-31 board is replaced.

SECTION 4. BOARD LAYOUTS

Printed circuit pattern of circuit boards and their printed symbols are shown in the almost same order of schematic diagrams.

SECTION 5. SCHEMATIC DIAGRAMS

Contains schematic diagrams of printed circuit board.

SECTION 6. SEMICONDUCTOR PIN ASSIGNMENTS

Contains pin assignment diagrams of semiconductors used.

SECTION 7. SPARE PARTS

Contains exploded views, mechanical parts list, and electrical parts list.

Operation and Maintenance Manual Part 1 (Supplied with PCM-E7700)

SECTION 1. OPERATIONS

SECTION 2. INSTALLATION

SECTION 3. SERVICE INFORMATION

SECTION 4. PERIODICAL INSPECTION AND
MAINTENANCE

SECTION 5. BLOCK DIAGRAMS, DESCRIPTION AND
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SECTION 6. SPARE PARTS

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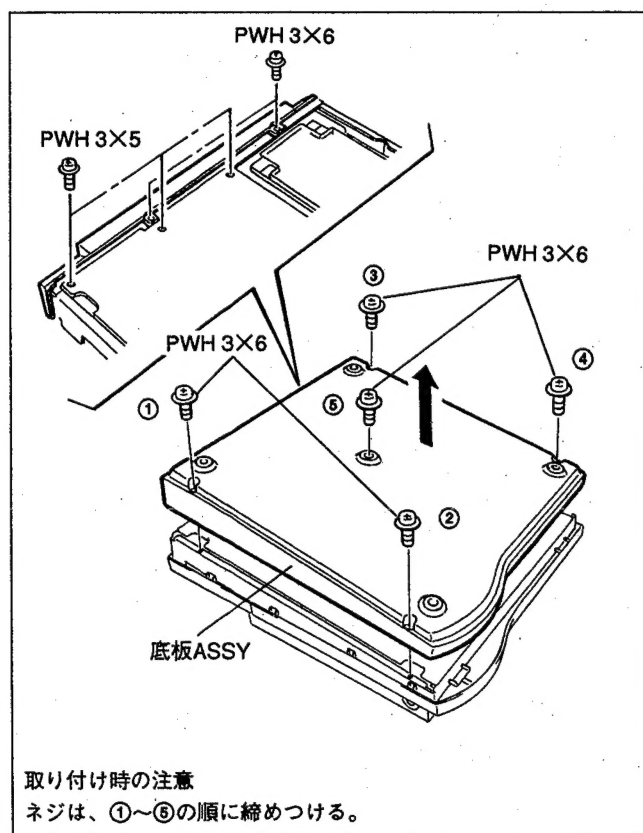
第1章 サービスインフォメーション

1-1. DCファンモータの交換

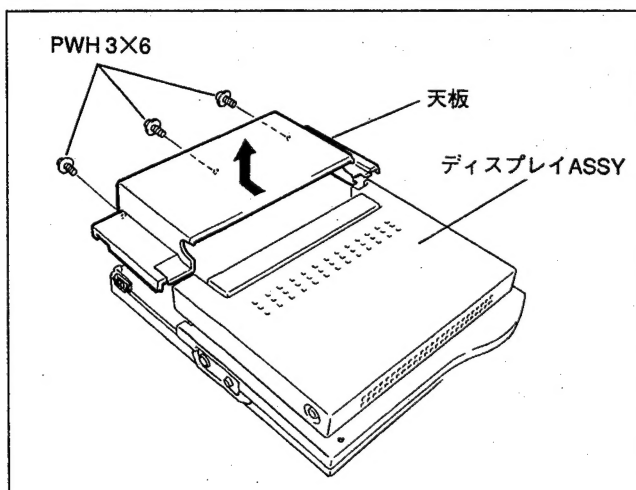
注意：電源スイッチをOFFにし、電源コードを抜いておく。

手順

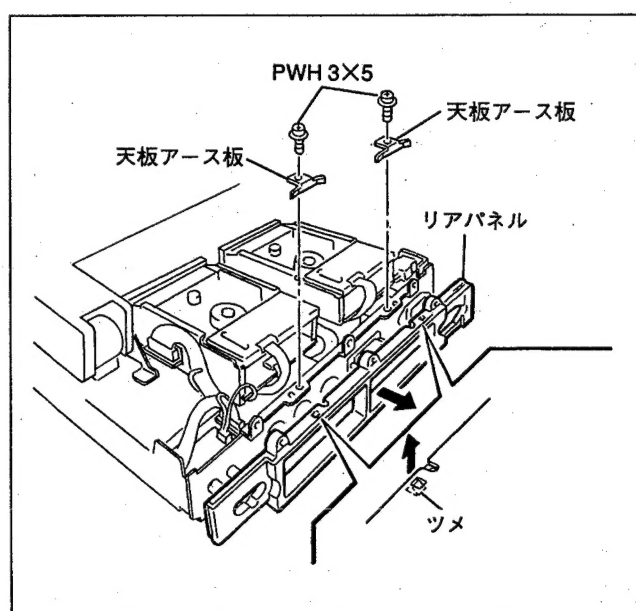
- (1) ネジ5本(PWH3×6)を外し、底板ASSYを取り外す。
次にネジ5本(PWH3×5)を外しておく。



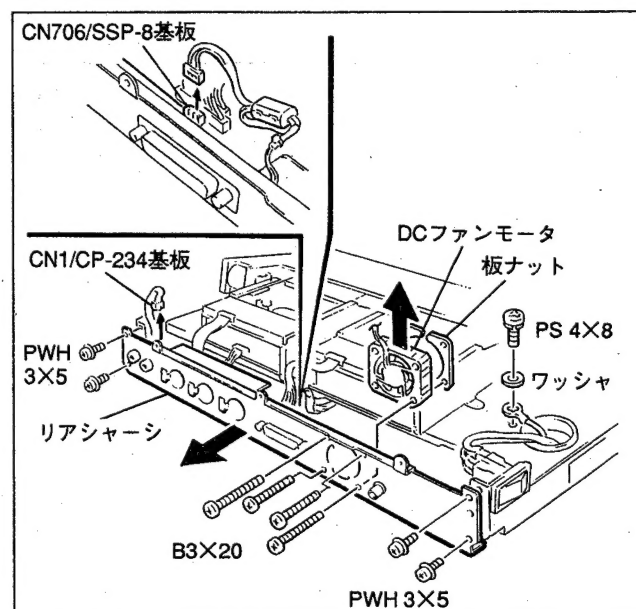
- (2) ネジ3本(PWH3×6)を外し、天板を後方にスライドさせてから、上へ取り外す。



- (3) ネジ2本(PWH3×5)と天板アース板を取り外す。
ツメ2ヶ所を外し、リアパネルを取り外す。



- (4) CN1/CP-234基板を外し、ネジ5本(PWH3×5、PS4×8)を外し、リアシャーシを引き出す。
コネクタCN706/SSP-8基板からハーネスを外し、ネジ4本(B3×20)を外す。
DCファンモータを取り外し、新しいファンモータと交換する。



1-2. SSP-8基板に関するサービス情報

1-2-1. SSP-8基板上の動作確認用LEDについて

SSP-8基板上には、動作確認用として下記のLEDがある。各LEDの働きは次のようになっている。

D106(RED): I/O CPU(IC103)が不良の時点灯
(通常動作時; 消灯)

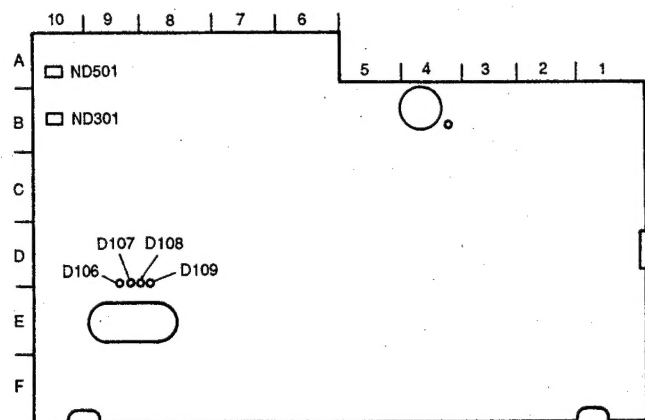
D107(RED): GDC(IC125)が不良の時点灯
(通常動作時; 消灯)

D108(YELLOW): EEROM(IC115)のアクセス中点灯

D109(GREEN): I/O CPUブロックが正常動作している時点滅
(約0.2s間隔)

ND301: PLAYER CPUブロックが正常動作していない時、表示が静止(止まる)

ND501: RECORDER CPUブロックが正常動作していない時、表示が静止(止まる)



SSP-8 Board
(部品面側)

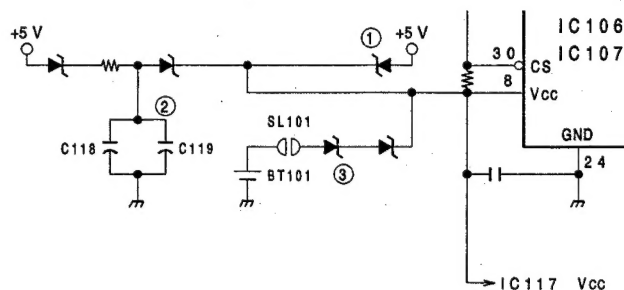
1-2-2. リチウム電池(CR-2450)の交換

SSP-8基板上にあるバッテリーバックアップ用リチウム電池(CR-2450)の寿命は、メッセージとして表示されない。したがって、オペレーション時間等を目安に交換する。
標準交換サイクル; 約3年
交換は以下の手順で行う。

部品名

リチウム電池(CR-2450); 1 (部品番号: 1-528-229-11)

動作説明



上記回路において、IC106、107、117は3系統の電源より、Vccの+5V、CSのPULL UP抵抗の+5Vを供給されるようになっている。

すなわち、

①本体電源

②本体電源によってチャージされたC118、C119からの+5V

③BT101からの+3V

である。

・ 本体動作中は①よりの供給、そして②の充電が行われる。

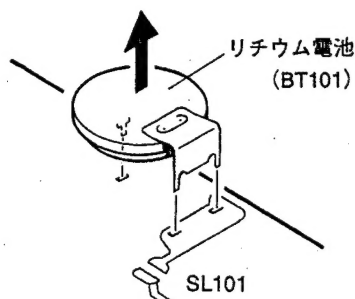
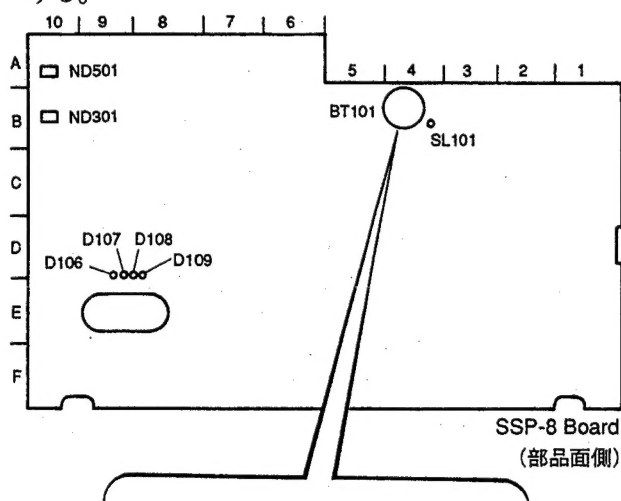
・ 本体をOFFにすると②からの供給が行われる。

・ ②が放電しつくすと、③からの供給が行われる。

これらの方法で、IC106、107のSRAMのデータおよびIC117の時計動作のバックアップが行われる。

交換手順

- (1) PCM-E7700本体の電源(POWER)スイッチをONにして、10分以上通電しておく。
- (2) 電源(POWER)スイッチをOFFにする。
- (3) SSP-8基板を本体より外す。
外し方については、MAINTENANCE MANUAL Part1の“2章外装の取り外し”および“Section6 6-2. EXPLODED VIEWS AND PARTS”を参考にして行う。
- (4) 基板の部品面側にあるスリットランド(SL101)のはんだをとる。
- (5) リチウム電池(BT101)をSSP-8基板より外す。
- (6) 新しいリチウム電池(CR-2450)をSSP-8基板に取り付ける。
- (7) スリットランド(SL101)をはんだ付け(はんだブリッジ)する。

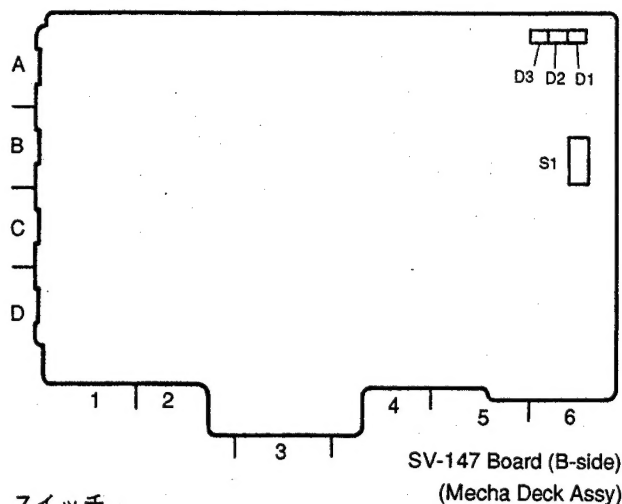


- (8) SSP-8基板を本体に取り付ける。
- (9) 電源(POWER)スイッチをONにする。
- (10) エラーメッセージが表示されずに起動することを確認する。

注意事項：

- ・交換を行う際、IC106、107、117の足などをショートするとSRAMおよび時計の内容が破壊されるので注意して行う。
- ・新しい電池の電圧が2.6V以上あることを確認してから交換する。

1-3. SV-147基板上のスイッチ設定/LEDの機能



スイッチ

S1(S1-1 to S1-4)；調整モード設定スイッチ
(詳細は“第2章メカデッキの交換および調整”参照)

工場出荷時の設定

S1-1 to S1-4；すべてOFF
(通常動作時の設定)

LED

D1；CPU 動作表示

点滅(約1秒間隔) 正常時
早い点滅(約0.5秒間隔) ... 異常検出時
点灯または消灯 CPU停止時

D2；調整モード表示

点灯 調整モードON
消灯 調整モードOFF

D3；サーボlock表示

点灯 lock
消灯 unlock

1-4. 補修用部品注意事項

1-4-1. 補修用部品注意事項

(1) 安全重要部品

回路図、分解図、電気部品表中で△印付きの部品は、安全性を維持するために重要な部品である。従ってこれらの部品を交換する時には、必ず指定の部品と交換すること。

(2) 部品の共通化

ソニーから供給される部品はセットに実装されているものと異なることがある。

これは部品の共通化、改良等によるものである。

分解図や電気部品表には現時点での共通化された部品が記載されている。

(3) 部品の変更

部品の変更に関する情報は「CHANGED PARTS」を参照すること。

(4) 部品の在庫

部品表のSP(Supply code)欄に○で示される部品は交換頻度が低い部品で、在庫していないことがあり、納期が長くなることがある。

(5) コンデンサ、抵抗の単位

回路図、分解図、電気部品表中、特に明記したものを除き、下記の単位は省略されていることがある。

コンデンサ: μF

抵抗: Ω

1-4-2. チップ部品の交換方法

用意する工具

はんだコテ: 20W程度。できれば、コテの温度を $270 \pm 10^\circ\text{C}$ にコントロールできる温度コントローラを使用すること。

編組線: SOLDER TAUL または同等品
ソニー部品番号 7-641-300-81

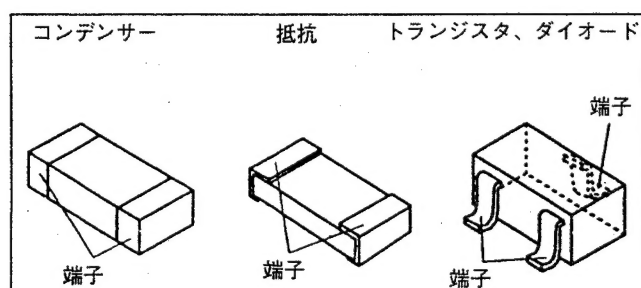
はんだ: 直径0.6mmが望ましい。

ピンセット

はんだ付条件

コテ温度: $270 \pm 10^\circ\text{C}$

はんだ付時間: 一端子について2秒以内にす。



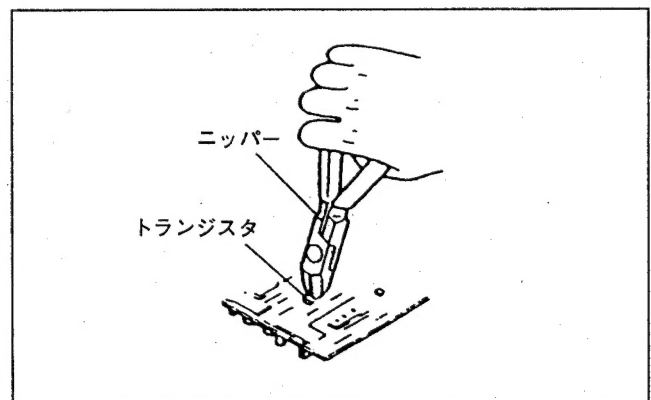
・抵抗、コンデンサの交換

- (1) はんだコテの先をチップ部品の上ののせてチップ部品を加熱し、はんだが溶けた状態で横にずらす。
- (2) 取り外した部分のパターンはがれ、隣接はんだ付部のダメージ、ブリッジなどがないことを確認する。
- (3) パターンにうすく予備をはんだする。
- (4) 新しいチップ部品をパターンにのせ、両端をはんだ付けする。

注意: 取り外したチップ部分は再び使わないこと。

・トランジスタ、ダイオードの交換

- (1) ニッパにて部品の端子を切断する。
- (2) 切断した端子をはんだコテで取り除く。
- (3) 取り除いた部品のパターンはがれ、隣接はんだ付部のダメージ、ブリッジなどがないことを確認する。
- (4) パターンにうすく予備をはんだをする。
- (5) 新しいチップ部品をパターンにのせ、端子をはんだ付けする。



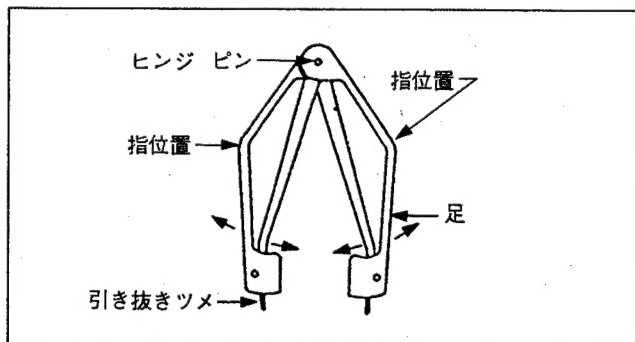
・ICの交換

- (1) 編組線を使って端子のはんだを取り除く。
- (2) はんだコテで加熱しながら、ピンセットなどを使って端子を一本ずつパターンから外し、ICを取り除く。
- (3) 取り除いた部分のパターンはがれ、隣接はんだ付部のダメージ、ブリッジなどがないことを確認する。
- (4) パターンにうすく予備をはんだをする。
- (5) 新しいチップ部品をパターンにのせ、端子をはんだ付けする。

1-4-3. PLCC ICの取り外し方法

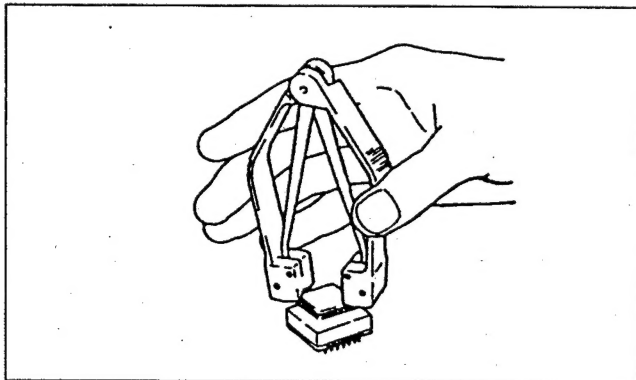
ICソケットに差し込まれたPLCCタイプのICを取り外す場合は、下記の工具を使用することを推奨します。20～124ピンまでのピン数のICに利用できます。

PLCCソケット用引き抜き工具
ソニー部品番号J-6035-070-A

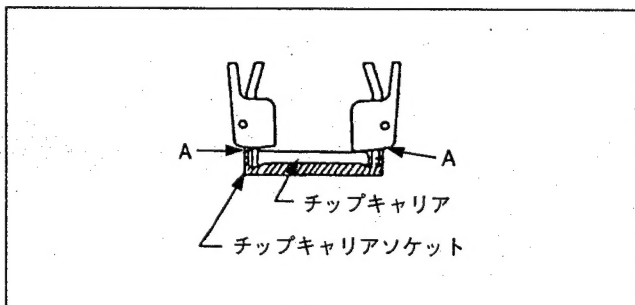


注意：・引き抜き工具でICチップを上方に引っ張らないこと。
・必要以上の力で工具をはさみ込まないこと。

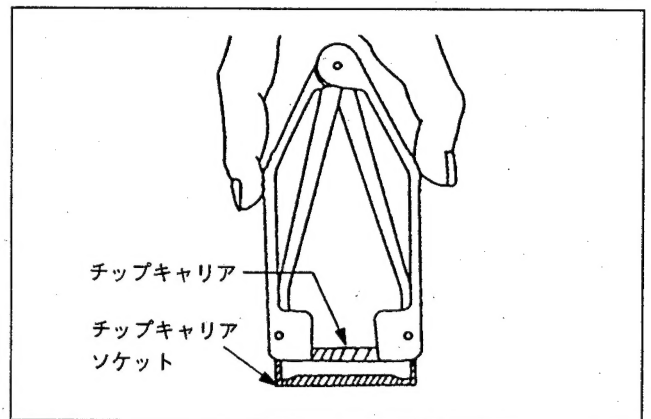
1. 工具の足をソケットのスロットの長さに合わせます。



2. 工具の先端の引き抜きツメをICソケットのスロットに差し込み、引き抜き工具の図に示すAの部分がソケットにあたるまで押し込みます。



3. 図のように引き抜き工具のリブの部分を持ちます。ソケットには下方向に小さな力がかかります。



4. 引き抜き工具をはさみ込みます。これにより、工具の足が伸びると同時に、工具の先端のツメがICチップをつかみ、上方向に引き抜きます。
5. 引き抜いた後、力をゆるめ、ICチップを引き抜き工具から外します。

2-2. 調整および確認

メカデッキASSYおよびメカデッキ部品(定期交換部品)を交換後、表Aに従って調整および確認を行う。

調整および確認は、本機に内蔵のサービスマニュアルを使用し、メカデッキASSYを本体に取り付けて行う。

サービスマニュアルの入り方

- (1) SV-147基板のBITスイッチ(S1)を以下のように設定する。

S1/SV-147基板の設定

S1-3; ON

S1-1、-2、-4; OFF

- (2) POWERスイッチをONにする。

- (3) **[SHIFT]** キー + **[MODE]** キーを同時(2重押し)に押す。

(サービスマニュアルの設定)

ELディスプレイ画面表示

SERVICE MENU			
1	PLAYER MECHANICAL DECK ADJUSTMENT		
2	RECORDER MECHANICAL DECK ADJUSTMENT		
3	TEST		
4	INFORMATION		
P-MD	R-MD	TEST	INFORM
F 1	F 2	F 3	F 4
F 5	F 6	F 7	

注意: F1~F7; ファンクションキー

- (4) PLAYERメカデッキを調整する場合;

[F1] (P-MD) キーを押す。

RECORDERメカデッキを調整する場合;

[F2] (R-MD) キーを押す。

ELディスプレイ画面表示

(注意: 画面は、RECORDER ADJUSTMENTの場合)

RECORDER ADJUSTMENT		SERVO BOARD BIT SW
<input type="checkbox"/> 1	SERVO DATA PRESET	BIT1 OFF MAN EJECT
2	PLUNGER CHECK	BIT2 OFF EEPROM EN
3	MECHA DEVICE TEST	BIT3 ON ERROR CUT
4	RECOGNITION SWITCH CHECK	BIT4 OFF
5	END SENSOR LEVEL CHECK(HIGH)	
6	END SENSOR LEVEL CHECK(LOW)	
7	DEW SENSOR CHECK	
8	REEL TORQUE CHECK	
9	FWD/RVS TORQUE ADJUSTMENT	
10	DRAM/CAPSTAN SPEED & WOW CHECK	
MESSAGE		
RECORDER: STOP		
TEST ON EXIT		
F 1	F 2	F 3
F 4	F 5	F 6
F 7		

*: SERVICE MENU時のモード設定操作キー表示

操作キー	モード
[SHUTTLE]:	STILL
[PREVIOUS]:	SHUTTLE-16
[NEXT]:	SHUTTLE+16
[PGM SEARCH]:	SHUTTLE-1
[LOCATE]:	SHUTTLE+1
[1]:	SHUTTLE-8
[2]:	SHUTTLE+8
[4]:	SHUTTLE-2
[5]:	SHUTTLE+2
[7]:	SHUTTLE-0.2
[8]:	SHUTTLE+0.2

- (5) **[F1]**、**[F2]** キーを使用して、表Aに従って必要な調整項目を選択し(カーソル“**[C]**”で選択)、

“2-2-2. サービスメニューでの調整および確認”を行う。

サービスマニュアルの抜け方(通常動作への復帰)

調整終了後、サービスマニュアルから通常動作モードへの復帰は以下のように行う。

- (1) SV-147基板のBITスイッチ(S1)を以下のように設定する。

S1-1、-2、-3、-4; すべてOFF

- (2) 本体のPOWERスイッチをOFFにする。

- (3) 本体のPOWERスイッチをONにする。

表A: 調整項目一覧

メカデッキASSYおよびメカデッキ部品(定期交換部品)を交換した際、表中の○印の項目が必要な調整項目。

調整項目 (サービスモード)	交換部品	メカデッキ組立	ドラム ASSY	カセコン ASSY	ドライブモーター ASSY	DCモーターキャブタン	リールモーター	ピンチローラー ASSY	ロータリーエンコーダー	HCローラー	その他	
											SV-147 ASSY (RP)	RF-53 ASSY (RP)
1. SERVO DATA PRESET												
2. PLUNGER CHECK							○					
3. MECHANICAL DEVICE TEST			○	○	○	○	○	○	○	○	○	
4. RECOGNITION SWITCH CHECK								○	○			
5. END SENSOR LEVEL CHECK (HIGH)				○							○	
6. END SENSOR LEVEL CHECK (LOW)				○							○	
7. DEW SENSOR CHECK												
8. REEL TORQUE CHECK							○					
9. FWD/REV TORQUE ADJUSTMENT							○				○	
10. DRUM/CAPSTAN SPEED & WOW CHECK			○									
11. TAPE PATH ADJUSTMENT			○			○	○	○				
12. SWP POSITION ADJUSTMENT			○								○	
13. PATH & FF/REW TIME CHECK			○			○	○	○				
14. PB ERROR RATE CHECK	○	○	○			○	○	○			○	○
15. REC CURRENT ADJUSTMENT (LEADING)			○								○	○
16. REC CURRENT ADJUSTMENT (TRAILING)			○								○	○
17. REC/PB ERROR RATE CHECK	○	○	○								○	○
18. SERVO DATA SAVE			○				○				○	○
19. SERVO DATA DISPLAY												
2-2-3. SV-147基板交換時の確認											○	

2-2-1. 準備

使用機器

名称	仕様	機器名
オシロスコープ	・ 4CH INPUT ・ DC to 150MHz	TEKTRONIX 2445Aまたは相当品
デジタルマルチメーター(テスター)	—	アドバンテストR6341Aまたは相当品

治工具

名称	部品番号	備考
調整ドライバー	J-6225-100-A	テープパス微調整用
RF LEVEL CHECKER PD-817	J-6228-170-A	記録再生系調整用
RF LEVEL CHECKER用 I/Fボックス PF-534	J-6405-340-A	PCM-E7700用

テストテープおよびトルクカセット

名称	部品番号	備考
テストテープ TY-7111DX	8-909-825-00	再生レベル確認用
テストテープ TY-7251	8-909-813-00	トラッキング調整用
テストテープ TY-30BX	8-892-332-38	記録レベル調整用(ブランクテープ)
テストテープ TY-7212	8-960-081-01	エラーレート確認用
トルクカセット TW-7131	8-909-708-71	FWD/REVトルク調整用
トルクカセット TW-7231	8-909-708-72	FF/REWトルク確認用

以下のテストテープは、市販のテープを表に従って使用する。

名称	使用方法
空カセット	テープなし(市販のカセットテープを改造)
テストテープ(01010)	空カセットでカセット識別穴(孔)が以下のテープ(市販のDATテープを改造) <div data-bbox="654 504 1093 705"> </div>
テストテープ(10101)	空カセットでカセット識別穴(孔)が以下のテープ(市販のDATテープを改造) <div data-bbox="710 795 1093 996"> </div>
テストテープ(エンドセンサーLOW)	市販の120分テープ(テープ中央付近で使用)
テストテープ(TOP)	市販の120分テープ(テープTOP付近で使用)
テストテープ(END)	市販の120分テープ(テープEND付近で使用)
テストテープ(FF/REW TIME)	市販の30分テープ(テープ全長記録済みで使用)

2-2-2. サービスメニューでの調整および確認

1. SERVO DATA PRESET (1. サーボデータプリセット)

通常、メカデッキ部品(定期交換部品)を交換した際は、この調整および確認は行う必要はない。

注意：誤ってサーボデータプリセットを行った場合は、本機のPOWERスイッチをOFFにし、再度ONにする。

使用機器、治工具；使用せず

使用テストテープ；使用せず

手順	確認
<p>(1) [F1]、[F2]キーで“1. SERVO DATA PRESET”を選択する。</p> <p>(2) [F1] (TEST ON) キーを押す。</p> <p>(3) ELディスプレイ画面にMESSAGE： PRESETTING IS COMPLETED!が表示される。</p> <p>(4) 表示後、[F1] (TEST OFF) キーを押す。 (プリセット終了)</p> <p>注意：[F1] キーを1回押すとTEST ONの状態からTEST OFF(画面表示)へと切り換わる。</p>	<p>ELディスプレイ画面</p> <p>注意：画面に表示されるプリセット値は、ROMのバージョンによって異なることがある。</p> <div style="border: 1px solid black; padding: 10px;"> <p>RECORDER ADJUSTMENT 1. SERVO DATA PRESET</p> <p>SWP POSITION = 117 (75H) EQ-L-X1 = 64 (40H) REC-L-PCMA1 = 217 (D9H) EQ-H-X1 = 66 (42H) REC-L-PCMB1 = 217 (D9H)</p> <p>FWD TORQ T = 14 (0EH) EQ-Q-X1 = 59 (3BH) REC-L-ATFA1 = 16 (10H) FWD TORQ S = 128 (80H) EQ-P-X1 = 44 (2CH) REC-L-ATFB1 = 16 (10H) REV TORQ T = 65 (41H) REV TORQ S = 138 (84H) EQ-L-X2 = 21 (15H) REC-T-PCMA1 = 217 (D9H) OFFSET TORQ = 56 (38H) EQ-H-X2 = 44 (2CH) REC-T-PCMB1 = 217 (D9H) EQ-Q-X2 = 37 (25H) REC-T-ATFA1 = 16 (10H) EQ-P-X2 = 21 (15H) REC-T-ATFB1 = 16 (10H)</p> <p>END T HIGH = 128 (80H) END S HIGH = 128 (80H) END T LOW = 00 (00H) END S LOW = 00 (00H)</p> <p>MESSAGE</p> <div style="border: 1px solid black; padding: 5px; text-align: center;">PRESETTING IS COMPLETED!</div> <p>RECORDER: NO TAPE</p> <p>-----</p> <p>TEST OFF</p> <p style="text-align: center;">F 1 F 2 F 3 F 4 F 5 F 6 F 7</p> </div>

2. PLUNGER CHECK (2. プランジャー回路動作確認)

使用機器、治工具；使用せず
使用テストテープ；使用せず

手順	確認
(1) [F1] 、 [F2] キーで“2. PLUNGER CHECK”を選択する。 (2) [F1] (TEST ON) キーを押す。 (3) プランジャーが動作する音を確認する。 また、ELディスプレイ画面の結果表示を確認する。 (4) [F1] キーを押す。	ELディスプレイ画面 <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <div style="display: flex; justify-content: space-between;"> RECORDER ADJUSTMENT 2. PLUNGER CHECK </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> PLUNGER KICK PLUNGER RELEASE </div> <div> PASS PASS </div> </div> <div style="margin-top: 10px;"> RECORDER: NO TAPE </div> <div style="border-top: 1px dashed black; margin-top: 5px;"> TEST OFF </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> F 1F 2F 3F 4F 5F 6F 7 </div> <div style="margin-top: 20px;"> 結果表示：PASS …正常 FAULT …異常 </div>

3. MECHANICAL DEVICE TEST (3. メカデバイステスト)

使用機器、治工具；使用せず
使用テストテープ；空カセット (“2-2-1. 準備”参照)

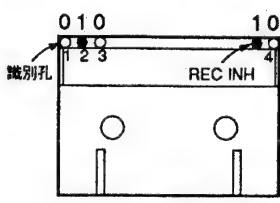
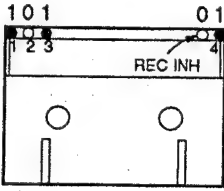
手順	確認
(1) [F1] 、 [F2] キーで“3. MECHA DEVICE TEST”を選択する。 (2) [F1] (TEST ON) キーを押す。 (3) 空カセットを挿入する。 メカデバイステストが実行され、テスト結果が画面に表示される。表示後、空カセットが自動的にイジェクトされる。 (4) 表示を確認後、 [F1] キー (TEST OFF) を押す。	ELディスプレイ画面 <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <div style="display: flex; justify-content: space-between;"> RECORDER ADJUSTMENT 3. MECHANICAL DEVICE TEST </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> CASSETTE UP SWITCH CASSETTE DOWN SWITCH ROTARY ENCODER DRUM MOTOR CAPSTAN MOTOR SUPPLY REEL MOTOR TAKEUP REEL MOTOR </div> <div> PASS PASS PASS PASS PASS PASS PASS </div> </div> <div style="margin-top: 10px;"> RECORDER: NO TAPE </div> <div style="border-top: 1px dashed black; margin-top: 5px;"> TEST OFF </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> F 1F 2F 3F 4F 5F 6F 7 </div> <div style="margin-top: 20px;"> 結果表示：PASS …正常 FAULT …異常 </div> <div style="margin-top: 20px;"> 注意：メカデバイステストモードに設定した場合、1度テストを実行しないと次のモードに移ることができない。 </div>

4. RECOGNITION SWITCH CHECK (4. レコグニションスイッチおよびストップ位置確認)

使用機器、治工具；使用せず

使用テストテープ；テストテープ(01010) ("2-2-1. 準備"参照)

テストテープ(10101) ("2-2-1. 準備"参照)

手順	確認／規格												
<p>(1) [4]、[5]キーで"4. RECOGNITION SWITCH CHECK"を選択する。</p> <p>(2) [F1] (TEST ON) キーを押す。</p> <p>(3) テストテープ(01010)を挿入する。ELディスプレイ画面の表示結果とテストテープ(01010)の識別孔が一致することを確認する。</p>	<p>ELディスプレイ画面</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; width: 50%;">RECORDER ADJUSTMENT</th><th style="text-align: left; width: 50%;">4. RECOGNITION SWITCH CHECK</th></tr> <tr> <td>HOLE-1 (RESERVED)</td><td>OPEN (0)</td></tr> <tr> <td>HOLE-2 (THIN)</td><td>CLOSE (1)</td></tr> <tr> <td>HOLE-3 (WIDE)</td><td>OPEN (0)</td></tr> <tr> <td>HOLE-RECINH</td><td>CLOSE (1)</td></tr> <tr> <td>HOLE-4 (SOFT TAPE)</td><td>OPEN (0)</td></tr> </table> <p>RECORDER: SBOFF</p> <hr style="border: 0.5px dashed black;"/> <p>TEST OFF</p> </div> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> F 1F 2F 3F 4F 5F 6F 7 </div> <div style="display: flex; align-items: center; justify-content: center;">  <div style="margin-left: 20px;"> <p>○: OPEN ●: CLOSE</p> </div> </div>	RECORDER ADJUSTMENT	4. RECOGNITION SWITCH CHECK	HOLE-1 (RESERVED)	OPEN (0)	HOLE-2 (THIN)	CLOSE (1)	HOLE-3 (WIDE)	OPEN (0)	HOLE-RECINH	CLOSE (1)	HOLE-4 (SOFT TAPE)	OPEN (0)
RECORDER ADJUSTMENT	4. RECOGNITION SWITCH CHECK												
HOLE-1 (RESERVED)	OPEN (0)												
HOLE-2 (THIN)	CLOSE (1)												
HOLE-3 (WIDE)	OPEN (0)												
HOLE-RECINH	CLOSE (1)												
HOLE-4 (SOFT TAPE)	OPEN (0)												
<p>(4) [EJECT] キーを押してテストテープ(01010)をイジェクトする。</p> <p>(5) テストテープ(10101)を挿入する。ELディスプレイ画面の表示結果とテストテープ(10101)の識別孔が一致することを確認する。</p>	<p>ELディスプレイ画面</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; width: 50%;">RECORDER ADJUSTMENT</th><th style="text-align: left; width: 50%;">4. RECOGNITION SWITCH CHECK</th></tr> <tr> <td>HOLE-1 (RESERVED)</td><td>CLOSE (1)</td></tr> <tr> <td>HOLE-2 (THIN)</td><td>OPEN (0)</td></tr> <tr> <td>HOLE-3 (WIDE)</td><td>CLOSE (1)</td></tr> <tr> <td>HOLE-RECINH</td><td>OPEN (0)</td></tr> <tr> <td>HOLE-4 (SOFT TAPE)</td><td>CLOSE (1)</td></tr> </table> <p>RECORDER: SBOFF</p> <hr style="border: 0.5px dashed black;"/> <p>TEST OFF</p> </div> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> F 1F 2F 3F 4F 5F 6F 7 </div> <div style="display: flex; align-items: center; justify-content: center;">  <div style="margin-left: 20px;"> <p>○: OPEN ●: CLOSE</p> </div> </div>	RECORDER ADJUSTMENT	4. RECOGNITION SWITCH CHECK	HOLE-1 (RESERVED)	CLOSE (1)	HOLE-2 (THIN)	OPEN (0)	HOLE-3 (WIDE)	CLOSE (1)	HOLE-RECINH	OPEN (0)	HOLE-4 (SOFT TAPE)	CLOSE (1)
RECORDER ADJUSTMENT	4. RECOGNITION SWITCH CHECK												
HOLE-1 (RESERVED)	CLOSE (1)												
HOLE-2 (THIN)	OPEN (0)												
HOLE-3 (WIDE)	CLOSE (1)												
HOLE-RECINH	OPEN (0)												
HOLE-4 (SOFT TAPE)	CLOSE (1)												
<p>(6) [PLAY] キーを押す。</p>	<p>確認：①クリーニングローラーがドラムに当り、すぐ離れることを確認する。</p> <p>②キャプスタン軸にピンチローラーが圧着し、回転することを確認する。</p>												

<p>(7) [STOP]キーを押す。</p>	<p>確認：ピンチローラーの停止位置を確認する。 規格：キャプスタン軸とピンチローラーの隙間=1.5mmから2.5mm</p> <div style="text-align: center;"> <p>STOP POSITION 2±0.5ミリ FWD POSITION</p> <p>← Tape キャプスタン軸 ← Tape キャプスタン軸</p> <p>ピンチローラー ゴムの部分 ゴムの部分</p> <p>キャプスタン軸とピンチローラーの すき間が1.5～2.5mmであること。 〔ピンチローラーのゴムの部分がキャ プスタン軸カバーに隠れる位置〕</p> </div>
<p>(8) [FI] (TEST ON) キーを押す。自動的にテストテープ(10101)がイジェクトされる。</p>	

5. END SENSOR LEVEL CHECK(HIGH) (5. エンドセンサー動作確認(HIGH))

使用機器、治工具；使用せず
使用テストテープ；空カセット

手順	確認／規格
<p>(1) [F1]、[F2]キーで“5. END SENSOR LEVEL CHECK(HIGH)”を選択する。</p> <p>(2) [FI] (TEST ON) キーを押す。</p> <p>(3) 空カセットを挿入する。 ELディスプレイ画面にセンサーレベルが表示される。センサーレベルが規格を満足することを確認する。</p> <p>(4) [FI] (TEST OFF) キーを押す。自動的に空カセットがイジェクトされる。</p>	<p>ELディスプレイ画面</p> <div style="border: 1px solid black; padding: 10px; margin: 10px;"> <p>RECORDER ADJUSTMENT 5. END SENSOR LEVEL CHECK(HIGH)</p> <p>T-END SENSOR LEVEL = X.XX V (XXH)</p> <p>S-END SENSOR LEVEL = X.XX V (XXH)</p> <p>RECORDER: SBOFF</p> <p>-----</p> <p>TEST OFF</p> </div> <p style="text-align: center;">F 1 F 2 F 3 F 4 F 5 F 6 F 7</p> <p>規格；センサーレベル=1.0 V以上</p>

6. END SENSOR LEVEL CHECK (LOW) (6. エンドセンサー動作確認 (LOW))

使用機器、治工具；使用せず

使用テストテープ；テストテープ(エンドセンサー (LOW)) (“2-2-1.準備”参照)

手順	確認／規格
<p>(1) [1]、[2]キーで“6. END SENSOR LEVEL CHECK (LOW)”を選択する。</p> <p>(2) [F1] (TEST ON) キーを押す。</p> <p>(3) テストテープ(エンドセンサー (LOW)) を挿入する。 注意；テストテープ(エンドセンサー (LOW))は、テープの巻き取り中央付近で使用する。 ELディスプレイ画面にセンサーレベルが表示される。センサーレベルが規格を満足することを確認する。</p> <p>(4) [F1] (TEST OFF) キーを押す。自動的にテストテープ(エンドセンサー (LOW)) がイジェクトされる。</p>	<p>ELディスプレイ画面</p> <div style="border: 1px solid black; padding: 10px; margin: 10px;"> <p>RECORDER ADJUSTMENT 6. END SENSOR LEVEL CHECK (LOW)</p> <p>T-END SENSOR LEVEL = X.XX V (XXH)</p> <p>S-END SENSOR LEVEL = X.XX V (XXH)</p> <p>RECORDER: SBOFF</p> <p>-----</p> <p>TEST OFF</p> </div> <p style="text-align: center;">F 1 F 2 F 3 F 4 F 5 F 6 F 7</p> <p>規格；センサーレベル=0.2 V 以下</p>

7. DEW SENSOR CHECK (7. DEWセンサーレベル確認)

使用機器、治工具；使用せず

使用テストテープ；使用せず

手順	確認／規格
<p>(1) [1]、[2]キーで“7. DEW SENSOR LEVEL CHECK”を選択する。</p> <p>(2) [F1] (TEST ON) キーを押す。ELディスプレイ画面にセンサーレベルが表示される。センサーレベルが規格を満足していることを確認する。</p> <p>(3) [F1] (TEST OFF) キーを押す。</p>	<p>ELディスプレイ画面</p> <div style="border: 1px solid black; padding: 10px; margin: 10px;"> <p>RECORDER ADJUSTMENT 7. DEW SENSOR LEVEL CHECK</p> <p>DEW SENSOR LEVEL = X.XX V (XXH)</p> <p>RECORDER: NO TAPE</p> <p>-----</p> <p>TEST OFF</p> </div> <p style="text-align: center;">F 1 F 2 F 3 F 4 F 5 F 6 F 7</p> <p>規格；センサーレベル=0.1 V < <u>X.XX V</u> < 0.4 V 表示レベル</p>

8. REEL TORQUE CHECK (8. FF/REW最大、最小トルク確認)

使用機器、治工具；使用せず

使用テストテープ；トルクカセット TW-7231

手順	確認／規格
<p>(1) [F1]、[F2]キーで“8. REEL TORQUE CHECK”を選択する。</p> <p>(2) [F1] (TEST ON) キーを押す。</p> <p>(3) トルクカセット (TW-7231) を挿入する。</p>	<p>ELディスプレイ画面 (TEST ON画面)</p> <div style="border: 1px solid black; padding: 10px; margin: 10px;"> <p>RECORDER ADJUSTMENT 8. REEL TORQUE CHECK</p> <p>CHECK OFF</p> <p><input checked="" type="checkbox"/> REEL TORQUE CHECK FF L (1.5V)</p> <p>CHECK OFF</p> <p>REEL TORQUE CHECK REW L (1.5V)</p> <p>CHECK OFF</p> <p>REEL TORQUE CHECK FF H (4.3V)</p> <p>CHECK OFF</p> <p>REEL TORQUE CHECK FF L (4.3V)</p> <p>CHECK OFF</p> <p>OFFSET TORQUE</p> <p>RECORDER: SBOFF</p> <p>-----</p> <p>TEST OFF</p> </div> <p style="text-align: center;">F 1 F 2 F 3 F 4 F 5 F 6 F 7</p>
<p>(4) [F1]、[F2]キーで“REEL TORQUE CHECK FFL”を選択する。</p> <p>トルクカセット (T側リール) のトルク値が規格内 (右記) であることを確認する</p>	<p>注意；T=TAKE UPリール側、S=SUPPLYリール側</p> <p>規格；T-REEL トルク=0.0004~0.001 N・m (4~10 g・cm)</p>
<p>(5) [F1]、[F2]キーで“REEL TORQUE CHECK REWL”を選択する。</p> <p>トルクカセット (S側リール) のトルク値が規格内 (右記) であることを確認する</p>	<p>規格；S-REEL トルク=0.0004~0.001 N・m (4~10 g・cm)</p>
<p>(6) [F1]、[F2]キーで“REEL TORQUE CHECK FFH”を選択する。</p> <p>トルクカセット (T側リール) のトルク値が規格内 (右記) であることを確認する</p>	<p>規格；T-REEL トルク=0.0026 N・m以上 (26 g・cm以上)</p>
<p>(7) [F1]、[F2]キーで“REEL TORQUE CHECK REWH”を選択する。</p> <p>トルクカセット (S側リール) のトルク値が規格内 (右記) であることを確認する</p>	<p>規格；S-REEL トルク=0.0026 N・m以上 (26 g・cm以上)</p>
<p>(8) [F1] (TEST OFF) キーを押す。</p> <p>自動的にトルクカセットがイジェクトされる。</p>	

使用テストテープ：トルクカセット TW-7131

10. DRUM/CAPSTAN SPEED & WOW CHECK (10. ドラム死点確認)

使用機器、治工具；使用せず

使用テストテープ；空カセット ("2-2-1. 準備" 参照)

手順	確認／規格
(1) [10] 、 [10] キーで、"10. DRUM/ CAPSTAN SPEED & WOW CHECK"を選択する。 (2) [F1] (TEST ON)キーを押す。 (3) 空カセットを挿入する。	ELディスプレイ画面 <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <div style="display: flex; justify-content: space-between;"> RECORDER ADJUSTMENT 10. DRUM/CAPSTAN SPEED & WOW CHECK </div> <p style="text-align: center;">DRUM SPEED ≈ 2000 rpm</p> <p>RECORDER: PLAY</p> <hr style="border-top: 1px dashed black;"/> <div style="display: flex; justify-content: space-between;"> TEST OFF SPEED </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> F 1 F 2 F 3 F 4 F 5 F 6 F 7 </div>
(4) [PLAY] キーを押す。	確認；ドラムを時計方向にゆっくり回しながら死点のないことを確認する。(指でドラムを止めた時、ドラムのどの位置でも指を離した時、ドラムが回転すること)

11. TAPE PATH ADJUSTMENT (11. テープパス調整)

使用機器、治工具

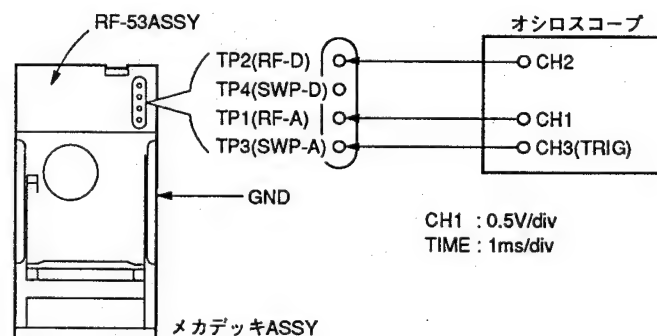
オシロスコープ

調整用ドライバー(J-6225-100-A)

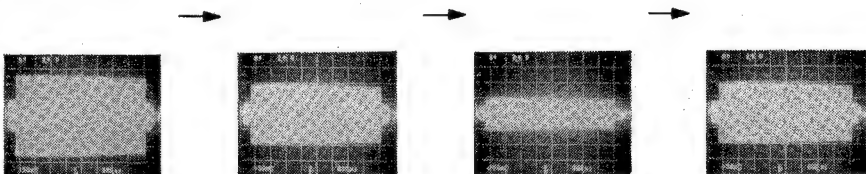
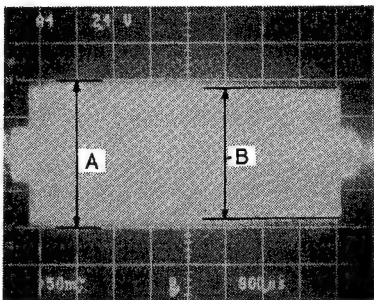
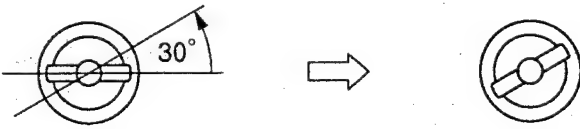
使用テストテープ

テストテープ TY-7251

接続



手順	確認/規格
<p>(1) オシロスコープをRF-53 ASSYの下記箇所に接続する。</p> <p>オシロスコープ RF-53 ASSY</p> <p>CH1 → TP1(RF-A)</p> <p>CH2 → TP2(RF-D)</p> <p>(RECORDERのみ)</p> <p>CH3 → TP3(SWP-A, TRIG)</p> <p>GNDは、メカデッキの板金等に接続する。</p> <p>(2) [F1]、[F2]キーで、"11.TAPE PATH ADJUSTMENT"を選択する。</p> <p>(3) [F1](TEST ON)キーを押す。</p> <p>(4) テストテープ(TY-7251)を挿入する。</p>	<p>ELディスプレイ画面</p> <p>RECORDER ADJUSTMENT 11. TAPE PATH ADJUSTMENT</p> <p>ATF OFFSET = 0%</p> <p>RECORDER: PLAY</p> <p>TEST OFF 0% 50% 100%</p> <p>F 1 F 2 F 3 F 4 F 5 F 6 F 7</p> <p>(5) [PLAY]キーを押す。</p> <p>規格；RF波形(TP1)が四角くなるようにする。</p> <p>RF波形 (TP1)</p> <p>調整；S1ガイド, T1ガイドの高さを調整ドライバー(J-6225-100-A)を使用して微調整する。</p>

<p>(6) [F5](100%)キーを押す。 (ATF OFF)</p>	<p>確認; RF波形(TP1)が平行に変化することを確認する。</p> 
<p>(7) [F4](50%)キーを押す。 (ATF OFFSET)</p>	<p>調整; S1ガイド、T1ガイドの高さを調整してRF波形が平行に変化するようにする。</p> <p>確認; RF波形(TP1)が下記規格を満足することを確認する。</p> <p>規格; ・波高値50%でRFの波形が長方形になること。 ・波形フラット部に対しての落込みが変動を含めて10%以内</p>  <p>RF波形 (TP1)</p> $\text{規格: } \frac{B}{A} \times 100 (\%) \geq 80\%$
<p>(8) [F3] (0%)キーを押す。(ATF ON)</p> <p>(9) [SHUTTEL(-16)]キーを押す。</p> <p>(10) [PLAY]キーを押した時のRF波形の立ち上がり時間を確認する。</p> <p>(11) [EJECT]キーを押し、テストテープをイジェクトする。</p> <p>(12) テストテープ(TY-7251)を挿入し、[PLAY]キーを押し、RF波形の立ち上がり時間を確認する。</p> <p>(13) [F1] (TEST OFF)キーを押す。 自動的にテストテープ(TY-7251)がイジェクトされる。</p>	<p>確認(規格); 2秒以内にRF波形(TP1)が安定すること。</p> <p>確認(規格); 2秒以内にRF波形(TP1)が安定すること。</p>
<p>(14) PLAYERメカデッキの場合はS1ガイドの高さを調整する。</p>	<p>調整; S1ガイドを調整ドライバー(J-6225-100-A)を使用して反時計方向に30°回転させる。</p>  <p>S1ガイド</p>

13. PATH & FF/REW TIME CHECK (13. テープ走行確認およびテープカール確認)

使用機器、治工具

オシロスコープ

使用テストテープ

テストテープ(TOP) ("2-2-1. 準備"参照)

テストテープ(END) ("2-2-1. 準備"参照)

テストテープ(FF/REW TIME) ("2-2-1. 準備"参照)

接続

"11.TAPE PATH ADJUSTMENT"に同じ

手順	調整/確認/規格
<p>(1) オシロスコープをRF-53 ASSYの下記箇所に接続する。</p> <p>オシロスコープ RF-53 ASSY</p> <p>CH1 → TP1(RF-A)</p> <p>CH3 → TP3(SWP-A, TRIG)</p> <p>(2) [F1]、[F2]キーで、"13. FF/REW TIME CHECK"を選択する。</p> <p>(3) [F1] (TEST ON)キーを押す。</p> <p>(4) テストテープ(TOP)を挿入する。</p>	<p>ELディスプレイ画面</p> <div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>RECORDER ADJUSTMENT 13. PATH & FF/REW TIME CHECK</p> <p>FF TIME = 0 SEC</p> <p>REW TIME = 0 SEC</p> <p>RECORDER: NO TAPE</p> <p>-----</p> <p>TEST OFF</p> </div> <p style="text-align: center;">F 1 F 2 F 3 F 4 F 5 F 6 F 7</p>
<p>(5) SHUTTLE (+1) ([LOCATE] キー) および SHUTTLE (-1) ([PGM SEARCH] キー)を交互に繰り返し押す。</p> <p>テープ走行が規格を満足することを確認する。</p>	<p>規格; ピンチローラーの前後で、テープ折れやガイドからのテープ脱落がないこと。</p>
<p>(6) SHUTTLE (+16) ([NEXT] キー) および SHUTTLE (-16) ([PREVIOUS] キー)を交互に繰り返し押す。</p> <p>テープ走行が規格を満足することを確認する。</p>	<p>規格; ピンチローラーの前後で、テープ折れやガイドからのテープ脱落がないこと。</p>
<p>(7) [EJECT]キーを押してテストテープ(TOP)をイジェクトする。</p> <p>(8) テストテープ(END)を挿入する。</p> <p>(9) SHUTTLE (+1) ([LOCATE] キー) および SHUTTLE (-1) ([PGM SEARCH] キー)を交互に繰り返し押す。この時のテープ走行が規格を満足することを確認する。</p>	<p>規格; ピンチローラーの前後で、テープ折れやガイドからのテープ脱落がないこと。</p>

(10) SHUTTLE (+16) (NEXT キー)および SHUTTLE (-16) (PREVIOUS キー)を交互に繰り返し押し。この時のテープ走行が規格を満足することを確認する。	規格；ピンチローラーの前後で、テープ折れやガイドからのテープ脱落がないこと。
(11) EJECT キーを押してテストテープ(END)をイジェクトする。 (12) テストテープ(FF/REW TIME)を挿入する。	
(13) REW キーまたは、 FF キーでFF動作、REW動作を行い、テープ巻き取り時間が規格を満足することを確認する。	規格；・FF動作テープ巻取り時間=20秒以内 REW動作テープ巻取り時間=20秒以内 ・FFおよびREW中にテープの当り抜けが発生しないことを、オシロスコープのRF波形で確認すること。
(14) F1 (TEST OFF) キーを押す。 自動的にテストテープ(FF/REW TIME)がイジェクトされる。	

14. PB ERROR RATE CHECK (14. 再生エラーレート確認)

使用機器、治工具

オシロスコープ

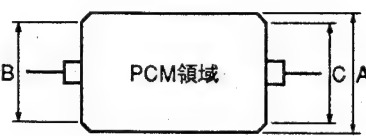
使用テストテープ

テストテープ TY-7212

注意：1. ERROR RATE測定は必ず天板を取り付けて行う。

2. 確認を行う前に、クリーニングテープを使用して、10秒間クリーニングする。

手順	調整/確認/規格																								
<p>(1) F1、F2 キーで、"14. PB ERROR RATE CHECK"を選択する。</p> <p>(2) F1 (TEST ON) キーを押す。</p> <p>(3) テストテープ(TY-7212)を挿入する。</p>	<p>ELディスプレイ画面</p> <div data-bbox="619 1525 1273 1908" style="border: 1px solid black; padding: 5px;"> <table> <tr> <td>RECORDER ADJUSTMENT</td><td>14. PB ERROR RATE CHECK</td></tr> <tr> <td>EQ-X1-L = 64 (40H)</td><td>PB SPEED X1</td></tr> <tr> <td>EQ-X1-H = 66 (42H)</td><td>PB HEAD LEADING</td></tr> <tr> <td>EQ-X1-Q = 59 (3BH)</td><td>ERROR RATE A-CH X.XE-X</td></tr> <tr> <td>EQ-X1-P = 44 (2CH)</td><td>B-CH X.XE-X</td></tr> <tr> <td>EQ-X2-L = 21 (15H)</td><td></td></tr> <tr> <td>EQ-X2-H = 44 (2CH)</td><td></td></tr> <tr> <td>EQ-X2-Q = 37 (25H)</td><td></td></tr> <tr> <td>EQ-X2-P = 21 (15H)</td><td></td></tr> <tr> <td>RECORDER: PLAY</td><td>TIME CODE: 00:10:58:40</td></tr> <tr> <td>TEST OFF</td><td>HEAD ↑ ↓</td></tr> <tr> <td>F1</td><td>F2 F3 F4 F5 F6 F7</td></tr> </table> </div>	RECORDER ADJUSTMENT	14. PB ERROR RATE CHECK	EQ-X1-L = 64 (40H)	PB SPEED X1	EQ-X1-H = 66 (42H)	PB HEAD LEADING	EQ-X1-Q = 59 (3BH)	ERROR RATE A-CH X.XE-X	EQ-X1-P = 44 (2CH)	B-CH X.XE-X	EQ-X2-L = 21 (15H)		EQ-X2-H = 44 (2CH)		EQ-X2-Q = 37 (25H)		EQ-X2-P = 21 (15H)		RECORDER: PLAY	TIME CODE: 00:10:58:40	TEST OFF	HEAD ↑ ↓	F1	F2 F3 F4 F5 F6 F7
RECORDER ADJUSTMENT	14. PB ERROR RATE CHECK																								
EQ-X1-L = 64 (40H)	PB SPEED X1																								
EQ-X1-H = 66 (42H)	PB HEAD LEADING																								
EQ-X1-Q = 59 (3BH)	ERROR RATE A-CH X.XE-X																								
EQ-X1-P = 44 (2CH)	B-CH X.XE-X																								
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EQ-X2-P = 21 (15H)																									
RECORDER: PLAY	TIME CODE: 00:10:58:40																								
TEST OFF	HEAD ↑ ↓																								
F1	F2 F3 F4 F5 F6 F7																								
(4) PLAY キーを押す、規格を満足することを確認する。	<p>規格；再生エラーレートA-CH=5×10⁻³以下 (表示: 5E-3以下) 再生エラーレートB-CH=5×10⁻³以下 (表示: 5E-3以下)</p>																								

<p>(5) STOP キーを押す。</p> <p>(6) [F1]、[F2] キーで"EQ-X2-L"を選択する。(2倍速モードになる)</p> <p>(7) [PLAY] キーを押し、規格を満足することを確認する。</p>	<p>規格；再生エラーレートA-CH=5×10^{-3}以下 (表示: 5E -3以下)</p> <p>再生エラーレートB-CH=5×10^{-3}以下 (表示: 5E -3以下)</p>
<p>(8) [STOP] キーを押す。</p> <p>注意；PLAYERデッキの場合は、(15)以降の確認へ進む。</p>	
<p>以下の確認は、RECORDERデッキのみ行う。</p> <p>(9) [F4](HEAD)キーを押し、画面の"PB HEAD TRAILING"を確認する。</p> <p>(10) [PLAY] キーを押し、規格を満足することを確認する</p>	<p>規格；再生エラーレートA-CH=5×10^{-3}以下 (表示: 5E -3以下)</p> <p>再生エラーレートB-CH=5×10^{-3}以下 (表示: 5E -3以下)</p>
<p>(11) [STOP] キーを押す。</p> <p>(12) [F1]、[F2] キーで"EQ-X1-P"を選択する。(ノーマルスピードモード)</p> <p>(13) [PLAY] キーを押し、規格を満足することを確認する。</p>	<p>規格；再生エラーレートA-CH=5×10^{-3}以下 (表示: 5E -3以下)</p> <p>再生エラーレートB-CH=5×10^{-3}以下 (表示: 5E -3以下)</p>
<p>(14) [STOP] キーを押す。</p> <p>(15) オシロスコープをRF-53 ASSYの下記箇所に接続する。</p> <p>オシロスコープ RF-53 ASSY</p> <p><RECORDERの場合></p> <p>CH1 → TP2(RF-D)</p> <p>CH3 → TP4(SWP-D, TRIG)</p> <p><PLAYERの場合></p> <p>CH1 → TP1(RF-A)</p> <p>CH3 → TP3(SWP-A, TRIG)</p> <p>(16) SHUTTLE (-2) [F4] キーを押す。</p>	<p>確認；RF波形(TP2)が下記規格を満足することを確認する。</p> <p>規格；RF波形の立ち上がり2sec以内</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 20px;"> <p>CH1 : TP2(RF-D) or TP1(RF-A)</p> </div>  <div style="margin-left: 20px;"> $\frac{B}{A} \cong \frac{5}{10}$ $\frac{C}{A} \cong \frac{5}{10}$ </div> </div> <p>波形が10秒間安定していることを確認する。</p>
<p>(17) [REW] キーを押す。</p>	
<p>(18) SHUTTLE (-2) [F4] キーを押す。</p>	
<p>(19) [F1](TEST OFF)キーを押す。</p> <p>自動的にテストテープ TY-7212 がイジェクトする。</p>	

15. REC CURRENT ADJUSTMENT(LEADING)(15. 記録レベル調整(先行ヘッド)(RECORDERデッキのみ))

使用機器、治工具

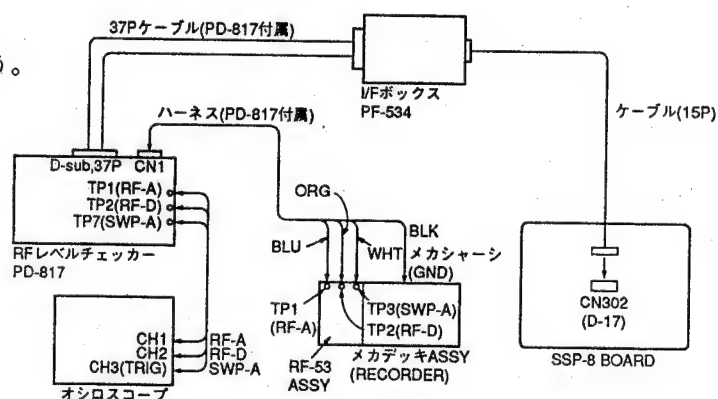
- オシロスコープ
- RFレベルチェッカー PD-817
- RFレベルチェッカー用 I/Fボックス PF-534

使用テストテープ

- テストテープ TY-7111DX
- テストテープ TY-30BX

接続

接続は、PCM-E7700のPOWERスイッチをOFFにして行う。
RF-534のケーブル(15P)のCN302/SSP-8基板への接続は、
キーパネルASSYを外して行う。
調整は、ケーブル(15P)を、はさまないようにして、
キーパネルASSYを本体に取り付けてから行う。



手順	調整／確認／規格																												
<p>(1) [T]、[I]キーで、"15. REC CURRENT ADJUSTMENT (LEADING)"を選択する。</p> <p>(2) [F1] (TEST ON)キーを押す。</p> <p>(3) テストテープ(TY-7111DX)を挿入する。</p> <p>(4) テストテープ(TY-7111DX)に添付されている校正値表に従って、校正値をRFレベルチェッカー(PD-817)のOFF SETダイヤルで設定する。*1</p> <p>(5) [PLAY]キーを押す。 RF波形(オシロスコープ)が安定することを確認する。</p> <p>(6) RFレベルチェッカー(PD-817)の[CAL]キーを押す。</p>	<p>ELディスプレイ画面</p> <table><tr><th colspan="2">RECORDER ADJUSTMENT</th><th colspan="2">15. REC CURRENT ADJUSTMENT(LEADING)</th></tr><tr><td>REC CURRENT</td><td>PCM-A</td><td>XXX (XXH)</td><td></td></tr><tr><td>REC CURRENT</td><td>PCM-B</td><td>XXX (XXH)</td><td></td></tr><tr><td>REC CURRENT</td><td>ATF-A</td><td>XXX (XXH)</td><td></td></tr><tr><td>REC CURRENT</td><td>ATF-B</td><td>XXX (XXH)</td><td></td></tr><tr><td colspan="2">RECORDER: REC</td><td colspan="2">TIME CODE: 00:10:58:40</td></tr><tr><td colspan="2">TEST OFF</td><td colspan="2"></td></tr></table> <p>F 1 F 2 F 3 F 4 F 5 F 6 F 7</p> <p>↑ </p>	RECORDER ADJUSTMENT		15. REC CURRENT ADJUSTMENT(LEADING)		REC CURRENT	PCM-A	XXX (XXH)		REC CURRENT	PCM-B	XXX (XXH)		REC CURRENT	ATF-A	XXX (XXH)		REC CURRENT	ATF-B	XXX (XXH)		RECORDER: REC		TIME CODE: 00:10:58:40		TEST OFF			
RECORDER ADJUSTMENT		15. REC CURRENT ADJUSTMENT(LEADING)																											
REC CURRENT	PCM-A	XXX (XXH)																											
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REC CURRENT	ATF-A	XXX (XXH)																											
REC CURRENT	ATF-B	XXX (XXH)																											
RECORDER: REC		TIME CODE: 00:10:58:40																											
TEST OFF																													

<p>(7) CAL 終了後、RFレベルチェッカー (PD-817)の[CAL]キーのLEDが点滅から点灯に変わったら、EJECTキーを押して、テストテープ(TY-7111DX)をイジェクトさせる。</p>	
<p>(8) テストテープ(TY-30BX, プランク部分)を挿入する。</p> <p>(9) RFレベルチェッカー(PD-817)のLEADING (A/B)キーを押す。 先行ヘッドのPCM/ATF(Ach, Bch)記録電流レベルの自動測定(自己記録・再生)が行われる。</p> <p>(10) 自動測定終了後(LEADINGキーのインジケータが点滅から点灯に変わる)、記録レベルがRFレベルチェッカーのレベルメーターに表示される。記録レベルが規格を満足するように手順(8), (9), (10)を繰り返す行う。</p>	<p>規格; PCM-AおよびPCM-Bの記録レベル=0.5±0.5 dB ATF-AおよびATF-Bの記録レベル=-0.5±0.5 dB RFレベルチェッカーのレベルメーター表示</p> <div data-bbox="619 707 1161 981"> </div> <p>調整; [I]、[II]キーで規格外の項目を選択し、[F6]および[F7]キーで以下のように調整する。 記録レベルを上げるには[F6] (UP) キーを押す。 記録レベルを下げるには[F7] (DOWN) キーを押す</p>
<p>(11) [FI](TEST OFF)キーを押す。 自動的にテストテープ(TY-30BX)がイジェクトされる。</p>	

*1: オフセットダイヤルの設定

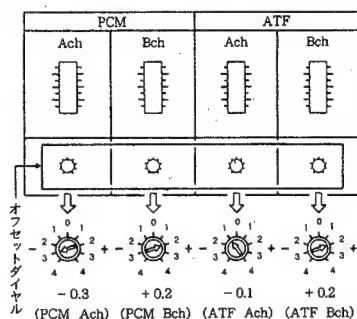
使用するテストテープ(TY-7111DX)に添付の校正値表に従って、1.57 MHz, 130 kHzのAch/Bchの校正値をRF LEVEL CHECKERのオフセットダイヤルで設定する。

設定例

校正値表の表示

	130.7(kHz)	1.568(MHz)
Ach	0.1	-0.3
Bch	+0.2	+0.2

オフセットダイヤルの設定(上記の校正値の場合)



16. REC CURRENT ADJUSTMENT (TRILING) (16. 記録レベル調整(後行ヘッド) (RECORDERデッキのみ))

使用機器、治工具

オシロスコープ

RFレベルチェッカー PD-817

RFレベルチェッカー用 I/Fボックス PF-534

使用テストテープ

テストテープ TY-30BX

テストテープ TY-7111DX

接続

“15.REC CURRENT ADJUSTMENT (LEADING)”に同じ

手順	調整/確認/規格
(1) [F1] 、 [F2] キーで、“16. REC CURRENT ADJUSTMENT (TRAILING)”を選択する。	ELディスプレイ画面
(2) [F1] (TEST ON) キーを押す。	
(3) テストテープ(TY-7111DX)を挿入する。	
(4) テストテープ(TY-7111DX)に添付されている校正値表に従って、校正値をRFレベルチェッカー (PD-817) のOFF SETダイヤルで設定する。*(2-22ページ参照)	
(5) [PLAY] キーを押す。 RF波形(オシロスコープ)が安定することを確認する。	
(6) RFレベルチェッカー (PD-817) の [CAL] キーを押す。	
(7) CAL終了後、RFレベルチェッカー (PD-817) の [CAL] キーのLEDが点滅から点灯に変わったら、 [EJECT] キーを押して、テストテープ(TY-7111DX)をイジェクトさせる。	

RECORDER ADJUSTMENT			16. REC CURRENT ADJUSTMENT (TRAILING)			
REC CURRENT	PCM-A	XX				
REC CURRENT	PCM-B	XX				
REC CURRENT	ATP-A	XX				
REC CURRENT	ATP-B	XX				
RECORDER: REC			TIME CODE: 00:10:58:40			
TEST OFF						
			↑ ↓			
F 1	F 2	F 3	F 4	F 5	F 6	F 7

(8) テストテープ(TY-30BX、ブランク部分)を挿入する。

(9) RFレベルチェッカー(PD-817)の

TRAILING(A/B)キーを押す。後行ヘッドのPCM/ATF(Ach, Bch)記録電流レベルの自動測定(自己記録・再生)が行われる。

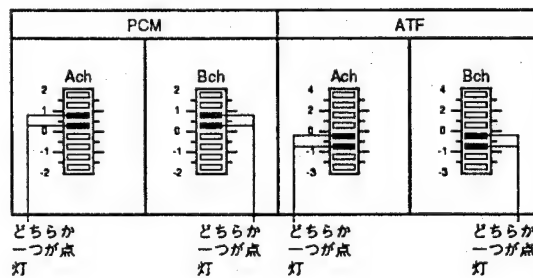
(10) 自動測定終了後(**TRILING**キーのインジケータが点滅から点灯に変わる)、記録レベルがRFレベルチェッカーのレベルメーターに表示される。記録レベルが規格を満足するように手順(8)、(9)、(10)を繰り返す。

(11) **F1** (TEST OFF)キーを押す。自動的にテストテープ(TY-30BX)がイジェクトされる。

規格; PCM-AおよびPCM-Bの記録レベル= 0.5 ± 0.5 dB

ATF-AおよびATF-Bの記録レベル= -0.5 ± 0.5 dB

RFレベルチェッカーのレベルメーター表示



調整; **F1**、**F2** キーで規格外の項目を選択し、**F6**および**F7**キーで以下のように調整する。

記録レベルを上げるには**F6** (UP)キーを押す。

記録レベルを下げるには**F7** (DOWN)キーを押す。

17. REC/PB ERROR RATE CHECH (17. 自己記録再生エラーレート確認))

使用機器、治工具；使用せず

使用テストテープ；テストテープTY-30BX

注意：1. REC/PB ERROR RATE 測定は、必ず天板を取り付けて行う。

2. 確認を行う前に、クリーニングテープを使用して、クリーニングを行う。

手順	調整／確認／規格
(1) [F1] 、 [F1] キーで“17. REC/PB ERROR RATE CHECK”を選択する。 (2) [F1] (TEST ON) キーを押す。 (3) テストテープ(TY-30BX)を挿入する。 (4) 画面の“REC HEAD LEADING”を確認する。	ELディスプレイ画面 <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <div style="display: flex; justify-content: space-between;"> RECORDER ADJUSTMENT 17. REC/PB ERROR RATE CHECK </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> REC SPEED X1 REC HEAD LEADING ERROR RATE (TRAILING) A-CH X.XE-X B-CH X.XE-X </div> <div style="text-align: right;"> RECORDER: REC TIME CODE: 0 0 : 1 0 : 5 8 : 4 0 ----- TEST OFF SPEED HEAD </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> F 1F 2F 3F 4F 5F 6F 7 </div> </div>
(5) [PLAY] キーを押す。 (6) [AUTO EDIT] キーを押し、先行記録 (X1) 中の後行再生エラーレートが規格を満足することを確認する。	規格；エラーレート A-CH=5E-3 (画面表示) (5×10 ⁻³ 以下) B-CH=5E-3 (画面表示) (5×10 ⁻³ 以下)
(7) [STOP] キーを押す。 (8) [F3] (SPEED) キーを押して“REC SPEED X2”を選択する。 (9) [PLAY] キーを押す。 (10) [AUTO EDIT] キーを押し、先行記録 (X2) 中の後行再生エラーレートが規格を満足することを確認する。	規格；エラーレート A-CH=5E-3 (画面表示) (5×10 ⁻³ 以下) B-CH=5E-3 (画面表示) (5×10 ⁻³ 以下)
(11) [STOP] キーを押す。 (12) [F3] (SPEED) キーを押して“REC SPEED X1”を選択する。 (13) [F4] (HEAD) キーを押す。画面の“REC HEAD TRAILING”を確認する。 (14) [PLAY] キーを押す。 (15) [AUTO EDIT] キーを押し、20秒間記録する。 (16) [STOP] キーを押す。	

<p>(17) SHUTTLE(-2) ([4] キー)を押して、記録開始部分まで巻き戻す。 注意；巻き戻しは、ディスプレイ画面のTIME CODEを目安に行う。</p> <p>(18) [PLAY] キーを押して、後行記録部分を再生し、再生エラーレートが規格を満足することを確認する。</p>	<p>規格；エラーレート A-CH=5E-3 (画面表示) (5×10^{-3}以下) B-CH=5E-3 (画面表示) (5×10^{-3}以下)</p>
<p>(19) [STOP] キーを押す。</p> <p>(20) [F1] (TEST OFF) キーを押す。 自動的にテストテープ(TY-30BX)がイジェクトされる。</p>	

18. SERVO DATA SAVE (18. サーボデータセーブ)

使用機器、治工具；使用せず
使用テストテープ；使用せず

手順	確認
<p>(1) SV-147基板のS1-2(BIT SW2)スイッチを“ON”にし、ディスプレイ画面(調整項目表示画面)の右上で確認する。</p>	
<p>(2) [1], [2] キーで“18. SERVO DATA SAVE”を選択する。</p> <p>(3) [F1] (TEST ON) キーを押す。 ディスプレイ画面のMESSAGE； “SAVING IS COMPLETED!”を確認する。</p> <p>(4) 確認後、[F1] (TEST OFF) キーを押す。</p> <p>(5) SV-147基板のS1スイッチを以下のように設定する。 S1-1 to S1-4：すべてOFF</p>	<p>ELディスプレイ画面</p> <div data-bbox="635 1317 1286 1889"> <p>RECORDER ADJUSTMENT 18. SERVO DATA SAVE</p> <p>SWP POSITION = 117 (75H) EQ-L-X1 = 64 (40H) REC-L-PCMA1 = 217 (D9H) EQ-H-X1 = 66 (42H) REC-L-PCMB1 = 217 (D9H) FWD TORQ T = 14 (0EH) EQ-Q-X1 = 59 (3BH) REC-L-ATFA1 = 16 (10H) FWD TORQ S = 128 (80H) EQ-P-X1 = 44 (2CH) REC-L-ATFB1 = 16 (10H) REV TORQ T = 65 (41H) REV TORQ S = 138 (8AH) EQ-L-X2 = 21 (15H) REC-T-PCMA1 = 217 (D9H) BACK TENTION = 56 (38H) EQ-H-X2 = 44 (2CH) REC-T-PCMB1 = 217 (D9H) EQ-Q-X2 = 37 (25H) REC-T-ATFA1 = 16 (10H) EQ-P-X2 = 21 (15H) REC-T-ATFB1 = 16 (10H) END T HIGH = 128 (80H) END S HIGH = 128 (80H) END T LOW = 00 (00H) END S LOW = 00 (00H)</p> <p>MESSAGE</p> <div data-bbox="727 1696 1177 1741">SAVING IS COMPLETED!</div> <p>RECORDER: NO TAPE</p> <p>-----</p> <p>TEST OFF</p> <p>F 1 F 2 F 3 F 4 F 5 F 6 F 7</p> </div>

19. SERVO DATA DISPLAY (19. サーボデータディスプレイ)

使用機器、治工具；使用せず

使用テストテープ；使用せず

注意：サーボデータディスプレイは、サーボデータの確認などに使うモードである。

調整中にサーボデータディスプレイを実行することによりその調整値を確認することができる。

手順	確認
<p>(1) [F1]、[F2]キーで“19. SERVO DATA DISPLAY”を選択する。</p> <p>(2) [F1](TEST ON)キーを押す。</p> <p>(3) ディスプレイ画面上のサーボデータを 確認する。</p> <p>(4) [F2](EXIT)キーを押す</p>	<p>ELディスプレイ画面</p> <div><div>RECORDER ADJUSTMENT</div><div>19. SERVO DISPLAY</div><div><div>SWP POSITION = 117 (75H)</div><div>EQ-L-X1 = 64 (40H)</div><div>EQ-H-X1 = 66 (42H)</div><div>FWD TORQ T = 14 (0EH)</div><div>FWD TORQ S = 128 (80H)</div><div>REV TORQ T = 65 (41H)</div><div>REV TORQ S = 138 (8AH)</div><div>BACK TENTION = 56 (38H)</div><div>END T HIGH = 128 (80H)</div><div>END S HIGH = 128 (80H)</div><div>END T LOW = 00 (00H)</div><div>END S LOW = 00 (00H)</div></div><div><div>EQ-Q-X1 = 59 (3BH)</div><div>EQ-P-X1 = 44 (2CH)</div><div>EQ-L-X2 = 21 (15H)</div><div>EQ-H-X2 = 44 (2CH)</div><div>EQ-Q-X2 = 37 (25H)</div><div>EQ-P-X2 = 21 (15H)</div></div><div><div>REC-L-PCMA1 = 217 (D9H)</div><div>REC-L-PCMB1 = 217 (D9H)</div><div>REC-L-ATFA1 = 16 (10H)</div><div>REC-L-ATFB1 = 16 (10H)</div><div>REC-T-PCMA1 = 217 (D9H)</div><div>REC-T-PCMB1 = 217 (D9H)</div><div>REC-T-ATFA1 = 16 (10H)</div><div>REC-T-ATFB1 = 16 (10H)</div></div></div> <div><div>RECORDER: NO TAPE</div><div>-----</div><div>EXIT</div></div> <div><div>F 1</div><div>F 2</div><div>F 3</div><div>F 4</div><div>F 5</div><div>F 6</div><div>F 7</div></div>

2-2-3. SV-147基板交換時の確認

SV-147基板を交換した際、交換後、メカデッキASSYを本体に取り付ける前に以下の確認を必ず行う。

使用機器、治工具

使用せず

使用テストテープ

空カセット("2-2-1.準備"参照)

サーボマイコン動作確認

- (1) SV-147基板のBITスイッチ(S1-3)をONにする。
- (2) 本体の電源(POWER)をONにする。
- (3) SV-147基板のLED(D1)が、1秒周期で点滅していることを確認する。
- (4) 空カセットを挿入し、SV-147基板のBITスイッチ(S1-1)をONにする。
- (5) 空カセットがイジェクトされることを確認し、BITスイッチ(S1-1)をOFFにする。

以上の確認終了後、"2-2. 調整および確認"に従って調整、確認を行う。

第3章 電気調整

ここでは、ADA-31基板の修理および保守を行う際に必要な電気調整について述べる。

ADA-31基板の調整は、下記“調整項目”について行う。

調整項目

3-1. A/D、D/A系調整(ADA-31基板)

3-1-1. A/D変換レベル調整



3-1-2. D/A変換レベル調整

使用機器

名称	規格	機器名
オーディオ アナライザ	・AFオシレータ レンジ；10 to 100 kHz レベル；-70 to +24 dBm ・ディストーション アナライザ (レベルメーター)	TEKRONIX SG505(OP2)、 AA501または 相当品

3-1. A/D、D/A系調整(ADA-31基板)

準備

- ・本調整は、天板およびキーASSYを外して行う。
ただし、キーASSYからのハーネスは接続したままとする。
(外し方は、“MAINTENANCE MANUAL Part1”参照)
- ・以下の手順でMODE設定を行った後、調整を行う。
(設定方法は、“OPERATION GUIDE”を参照)

手順

- (1) SET UPモード(ELディスプレイ画面)(SUB MODE；
SYSTEM)の“FACTORY SETTING”(工場出荷時の設定
データ)を呼び出す。
- (2) MANUAL RECモード(ELディスプレイ画面)のSUB
MODE；EXT ANALOG(外部入力モード)に設定する。

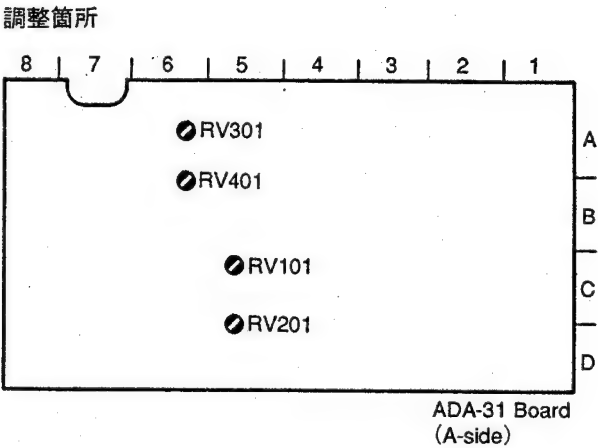
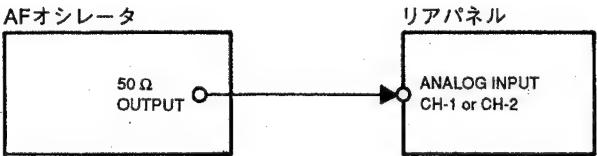
以下の調整は、このモードで行う。

3-1-1. A/D変換レベル調整

ここでは、ADA-31基板のA/Dブロックの電気調整を行う。
ADA-31基板を交換した際、最初に行う。
引き続き“3-1-2. D/A変換レベル調整”を行う。

使用機器
オーディオアナライザ（AFオシレーター）

接続



- 調整前の準備
- ファンクションキー **[F7]** “METER”を押して、METER表示を数値表示にする。
 - GAIN表示がCH1、CH2共“0.0 dB”表示であることを確認する。
0.0 dB表示になっていない場合、ファンクションキー **[F6]** “BAL RES”および **[F7]** “LVL RES”を押して、GAIN表示を0.0 dBにする。

ステップ	調整時の状態	規格	調整箇所(ADA-31基板)
1	・ ANALOG IN CH1コネクタに 1 kHz、4 dBsの信号を入力する。	METER表示CH1の数値； -20.0 dB	●RV101(C、5)
2	・ ANALOG IN CH2コネクタに 1 kHz、4 dBsの信号を入力する。	METER表示CH2の数値； -20.0 dB	●RV201(D、5)

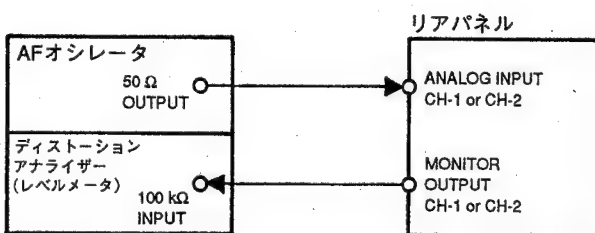
3-1-2. D/A変換レベル調整

ここでは、ADA-31基板のD/Aブロックの電気調整を行う。
調整は、“3-1-1. A/D変換レベル調整”の後に行う。

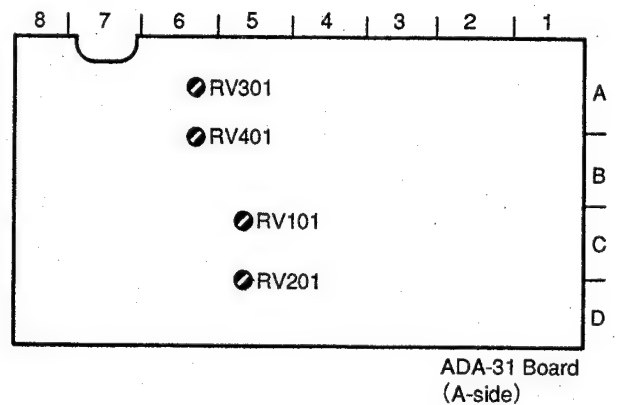
使用機器

オーディオアナライザ (AFオシレーター、
ディストーションアナライザ
(レベルメータ))

接続



調整箇所



ステップ	調整時の状態	規格	調整箇所 (ADA-31基板)
1	・ ANALOG IN CH1コネクタに 1 kHz、4 dBsの信号を入力する。	MONITOR OUTPUT CH1 出力レベル； -10 dBs±0.5 dB	●RV301 (A、6)
2	・ ANALOG IN CH2コネクタに 1 kHz、4 dBsの信号を入力する。	MONITOR OUTPUT CH2 出力レベル； -10 dBs±0.5 dB	●RV401 (B、6)

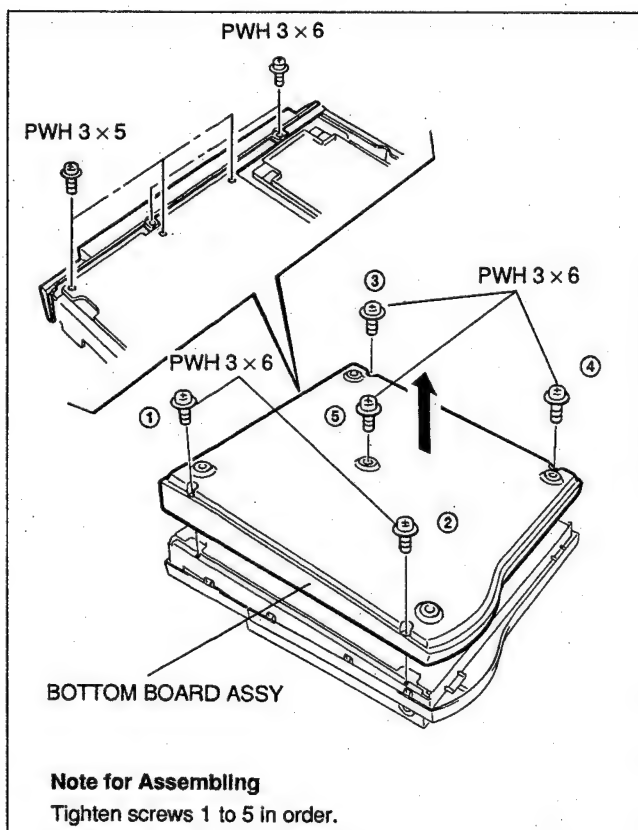
SECTION 1 SERVICE OVERVIEW

1-1. REPLACEMENT OF DC FAN MOTOR

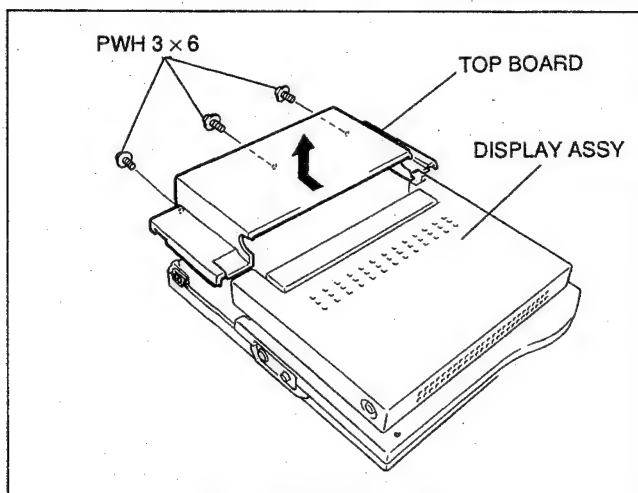
Note: Turn off the power supply switch and disconnect the power cord.

Procedure:

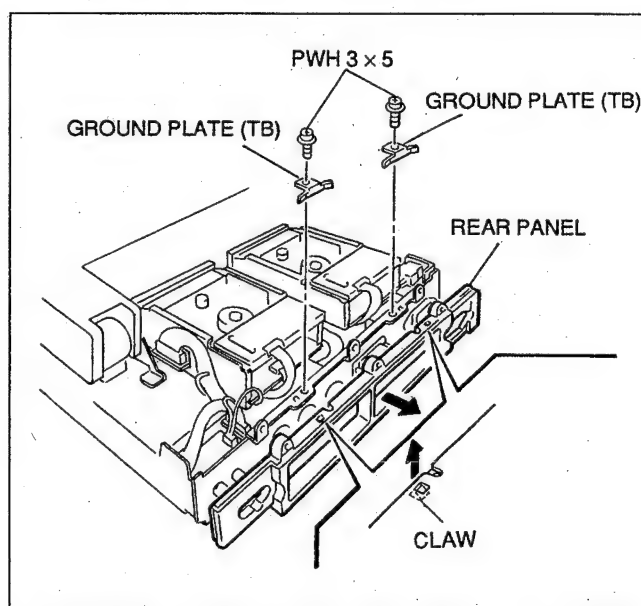
- (1) Remove the five screws (PWH3 × 6) and remove the bottom board assembly.
Next, remove the five screws (PWH3 × 5).



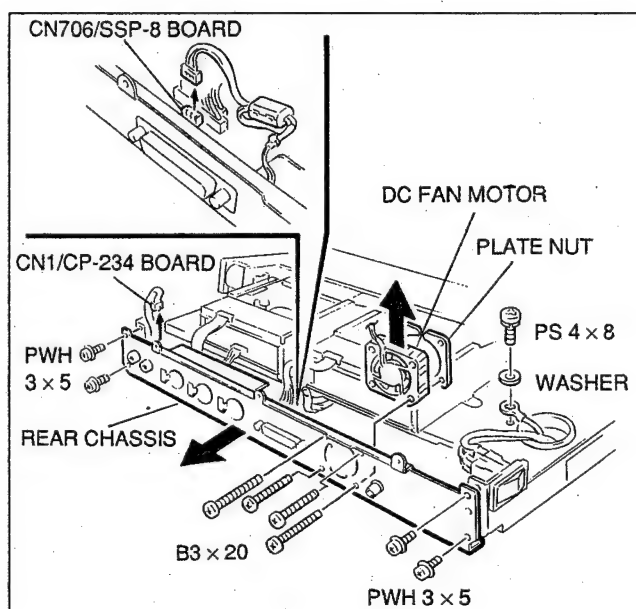
- (2) Remove the three screws (PWH3 × 6), slide the top board backwards and remove it upwards.



- (3) Remove the two screws (PWH3 × 5) and the ground plate (TB).
Remove the two claws and the rear panel.



- (4) Remove the CN1/CP-234 board and the five screws (PWH3 × 5, PS4 × 8), and pull out the rear chassis. Remove the harness from the CN706 connector of the SSP-8 board and remove the four screws (B3 × 20). Remove the DC fan motor and replace it with a new one.

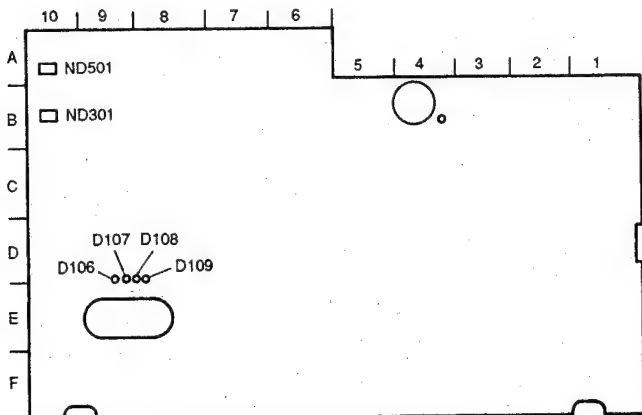


1-2. SERVICE INFORMATION ON SSP-8 BOARD

1-2-1. LEDs for Checking Operations on SSP-8 Board

The SSP-8 board has the following LEDs for checking operations. Their functions are as follows.

- D106 (RED): Lights up when the I/O CPU (IC103) fails
(When operating normally: Off)
- D107 (RED): Lights up when GDC (IC125) fails
(When operating normally: Off)
- D108 (YELLOW): Lights up when the EEROM (IC115) is accessing
- D109 (GREEN): Blinks when the I/O CPU block is operating normally
(At intervals of approximately 0.2s)
- ND301: Display stops when the player CPU block is not operating normally
- ND501: Display stops when the recorder CPU block is not operating normally



SSP-8 Board
(Component side)

1-2-2. Replacement of Lithium Battery (CR-2450)

The life of the lithium battery (CR-2450) incorporated in the SSP-8 board for backing up the battery will not be displayed. Therefore replace it according to how long the unit has been used, etc.

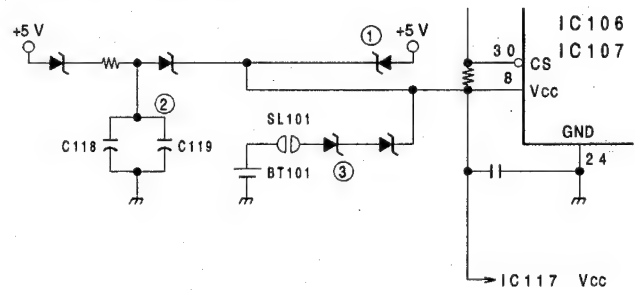
Standard time for replacement: Approximately every 3 years.

Replace it as follows.

Part Name:

Lithium battery (CR-2450): 1 (Part No: 1-528-229-11)

Outline of Operations



In the above circuit, the +5 V of Vcc and the +5 V pull up resistance of the CS are supplied to IC106, IC107, and IC117 by three power supplies.

They are:

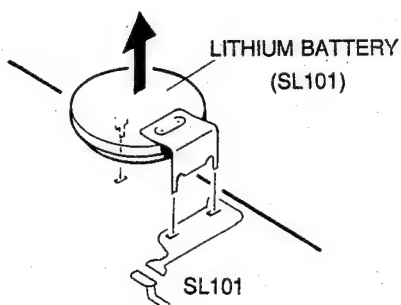
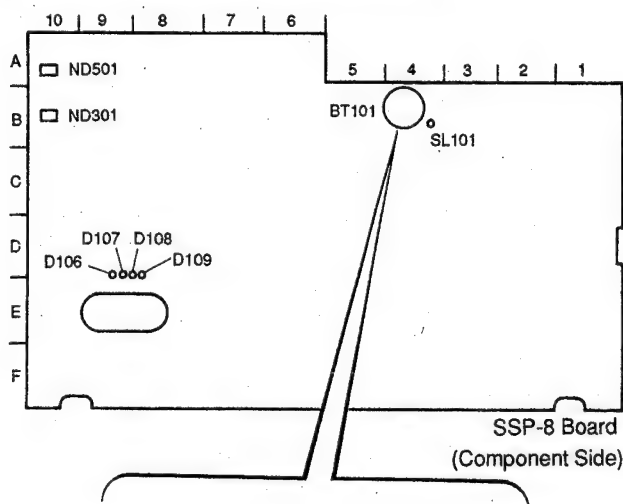
- ① Main power supply
- ② +5 V from C118 and C119 charged by the main power supply
- ③ +3 V from BT101

- While the unit is operating, they will be supplied by ①.
- ② will be charged at the same time.
- When the unit is turned off, they will be supplied by ②.
- When ② has discharged all its power, power will be supplied by ③.

The SRAM data of IC106 and IC107 and the clock of IC117 are backed up in this way.

Replacing Procedure

- (1) Turn on the power switch of PCM-E7700 and let the power flow for more than ten minutes.
- (2) Turn off the power switch.
- (3) Remove the SSP-8 board from the unit.
For details of removing, refer to "SECTION 3. CABINET REMOVAL" and "SECTION 6-2. EXPLODED VIEWS AND PARTS" in Maintenance Manual Part 1.
- (4) Desolder the slit land (SL101) on the component side of the SSP-8 board.
- (5) Remove the lithium battery (BT101) from the SSP-8 board.
- (6) Install the new lithium battery (CR-2450) to the SSP-8 board.
- (7) Solder (solder bridge) the slit land (SL101).

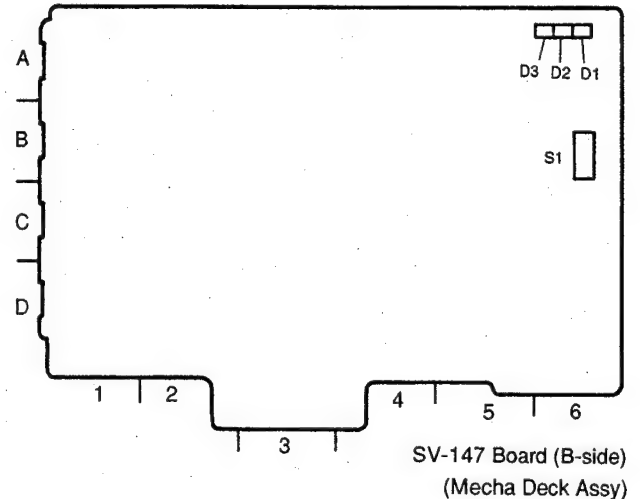


- (8) Attach the SSP-8 board to the unit.
- (9) Turn on the power switch.
- (10) Check that no error message is displayed when started up.

Note:

- The SRAM and clock data will be destroyed if the pins of IC106, IC107, and IC117 are short-circuited during the replacement.
- Check that the voltage of the new battery is more than 2.6 V before the replacement.

1-3. SWITCH SETTING/LED FUNCTION ON SV-147 BOARD



Switches

S1 (S1-1 to S1-4); Adjustment Mode Setting Switch
(For details, refer to "Section 2. Replacement and Adjustment of Mechanism Deck")

Factory setting

S1-1 to S1-4; All OFF
(Setting for normal operations)

LED

D1; CPU Operation Indicator
Blinking (Approx. every 1 sec.) When operating normally
Blinking quickly (Approx. every 0.5 sec.) When an error is detected
Lit or off When not operating

D2; Adjusting Mode Indicator

Lit When adjustment mode is ON
Off ... When adjustment mode is OFF

D3; Servo Lock Indicator

Lit Locked
Off ... Unlocked

1-4. NOTES ON REPAIR PARTS

1-4-1. Notes on Repair Parts

(1) Safety Related Components Warning

Components marked with Δ on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose part numbers appear in this manual or in service bulletins and service manual supplements published by Sony.

(2) Standardization of Parts

Repair parts supplied from Sony Parts Center may not be always identical with the parts which actually in use due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts".

This manual's exploded views and electrical spare parts list are indicating the part numbers of "the standardized genuine parts at present".

(3) Change of Parts

Regarding engineering parts changes, refer to "CHANGED PARTS"

(4) Stock of Parts

Parts marked with "o" SP (Supply Code) column of the spare parts list are not normally required for routine service work. Orders for parts marked with "o" will be processed, but allow for additional delivery time.

(5) Units for Capacitors and Resistors

The following units may be assumed in schematic diagrams, electrical parts list and exploded views unless otherwise specified.

Capacitors : μF

Resistors : Ω

1-4-2. Replacement Procedure for Chip Parts

Required Tools

Soldering iron: 20W If possible, use a soldering iron tip heat-controller at $270 \pm 10^\circ\text{C}$.

Braided wire: SOLDER TAUL or equivalent
Sony part No. 7-641-300-81

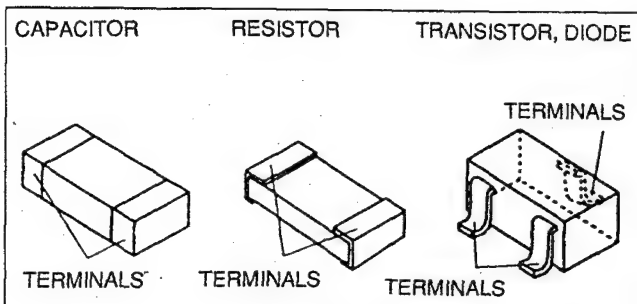
Solder: 0.6 mm dia. is recommended.

Tweezers

Soldering Conditions

Soldering iron temperature: $270 \pm 10^\circ\text{C}$.

Soldering time: less than two seconds per a pin.



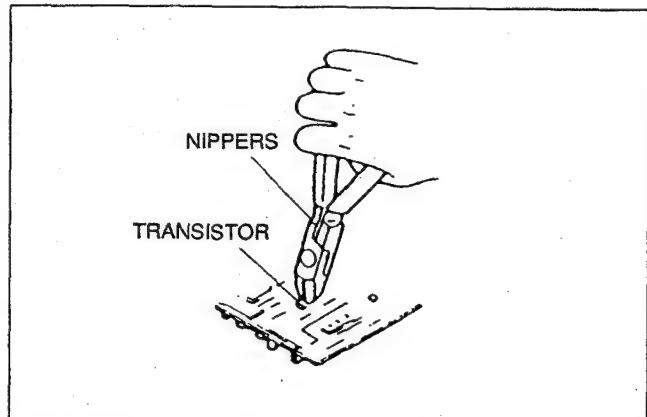
• Resistor and Capacitor Replacement

- (1) Place the soldering iron tip onto the chip part and heat it up until the solder is melted. When the solder is melted, slide the chip part aside.
- (2) Make sure that there is no pattern peeling, damage and/or bridges around the desoldering positions.
- (3) After removing the chip part, presolder the area, in which the new chip part is to be placed, with a thin layer of solder.
- (4) Place new chip part in the desired position and solder both ends.

NOTE: Once a chip part has been removed, never use it again.

• Transistor and Diode Replacement

- (1) Cut the terminals of the chip part with a nipper.
- (2) Remove the cut leads.
- (3) Make sure that there is no pattern peeling, damage and/or bridges around the desoldering positions.
- (4) After removing the chip part, presolder the area, in which the new chip part is to be placed, with a thin layer of solder.
- (5) Place new chip part in the desired position and solder the terminals.



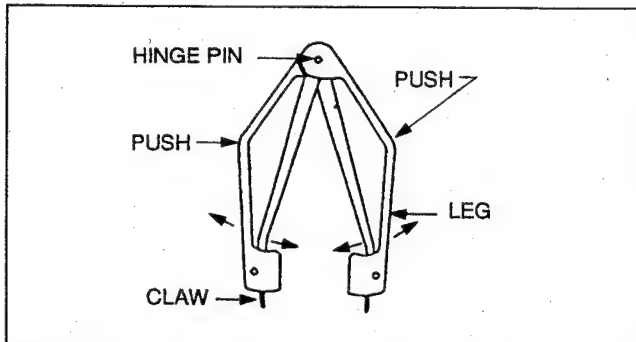
• IC Replacement

- (1) Using the braided wire, "SOLDER TAUL" Sony Part No. 7-641-300-81, remove the solder around the pins of the IC-chip to be removed.
- (2) While heating up the pins, remove the pins one by one using sharp-pointed tweezers.
- (3) Make sure that there is no pattern peeling, damage and/or bridges around the desoldering positions.
- (4) After removing the chip part, presolder the area, in which the new chip part is to be placed, with a thin layer of solder.
- (5) Place new chip part in the desired position and solder the pins.

1-4-3. Removal of PLCC IC

The Extraction Tool is useful for removing the IC (PLCC type) inserted into an IC socket. This is useful for all sizes of ICs 20 pins through 124 pins.

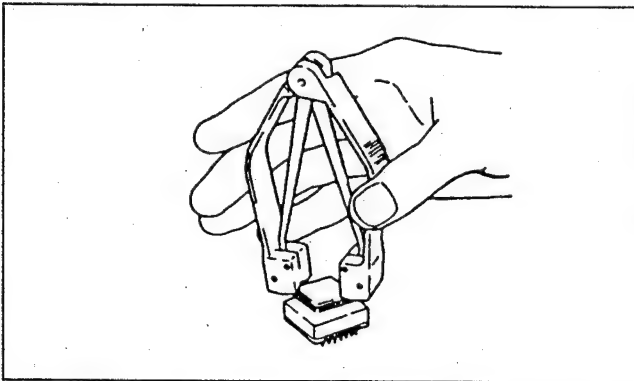
Extraction Tool (for PLCC socket)
Sony Part No. J-6035-070-A



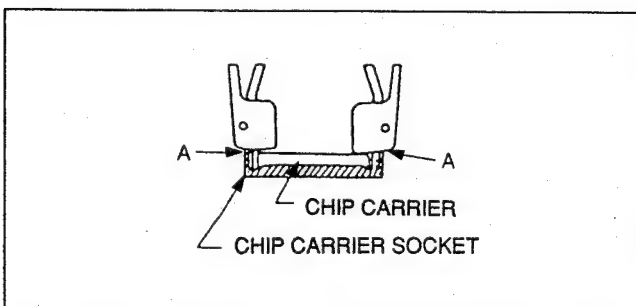
Note:

- Never pull chips of IC upward with the Extraction Tool.
- Never hold the Extraction Tool on a strong force.

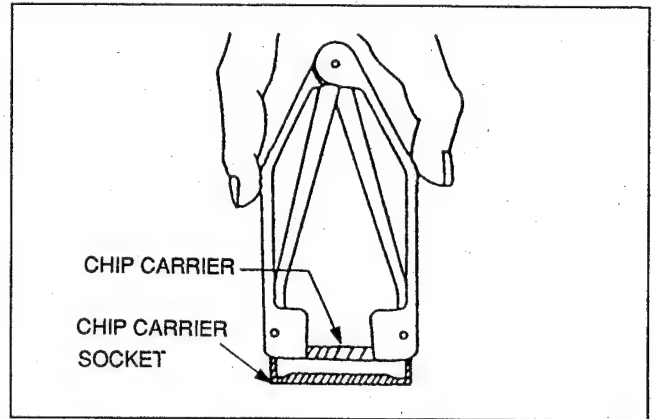
(1) Adjust which so that claws of the tool are matched to the socket of an IC.



(2) Insert the claws of the tool into the slots of the socket, and then press the tool against the socket so that the A portion shown in the figure contact to the socket.



(3) Hold the tool as shown in the figure. The socket is pressed on a little force to downward.



(4) Pinch the tool, so the legs of the tool are straightened. At that time, the claws pinch the chips of the IC and pull the IC upward.

(5) After pulling the IC, loosen the force of the fingers, and take off the chip.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 3.5mA. Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 5.25V so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 20V AC range are suitable. (See Fig. A)

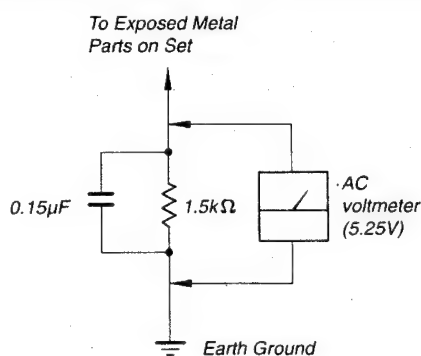


Fig. A. Using an AC voltmeter to check AC leakage.

CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

SECTION 2

REPLACEMENT AND ADJUSTMENT OF MECHANISM DECK

2-1. REPLACEMENT OF MECHANICAL DECK ASSY AND PARTS

Replace the parts to replace periodically (refer to item "4-2" in Maintenance Manual Part 1) following the table below.

- The parts required to remove when replacing the parts to replace periodically are signified with "○".
- The figures in the circles signify the removing order of the parts required to remove.
- Assemble the parts in the reverse order of the removal. After replacement, proceed to "2-2. ALIGNMENT AND CHECK".

Note: Be sure to turn the POWER switch OFF during the operation.

Parts to Replace Periodically	Parts Required to Remove									
	RF SHIELD CASE (TOP)	CASSETTE WINDOW ASSY	MD SIDE PLATE (L) ①	MD SIDE PLATE (R)	RF-53 ASSY ②	FLEXIBLE SHIELD PLATE	SV-147 BOARD	MD SHIELD PLATE	CASSETTE COMPARTMENT ASSY	REEL MOTOR
MECHANICAL DECK (PLAYER) ASSY	—	—	—	—	—	—	—	—	—	—
MECHANICAL DECK (RECORDER) ASSY	—	—	—	—	—	—	—	—	—	—
DRUM ASSY (4ch) DOU-21A-R (PLAYER)	①	②	③	④	⑤	⑥	⑦	⑧	—	—
DRUM ASSY (2ch) DOU-22A-R (RECORDER)	①	②	③	④	⑤	⑥	⑦	⑧	—	—
CAPSTAN MOTOR U-21A	—	①	②	③	—	—	④	⑤	—	—
REEL MOTOR	—	①	②	③	—	—	④	⑤	—	—
PINCH ROLLER ASSY	—	①	②	③	—	—	④	⑤	⑥	⑦
DRIVE MOTOR ASSY	①	②	③	④	⑤	—	⑥	⑦	—	—
HC ROLLER	—	—	—	—	—	—	—	—	—	—
ROTARY ENCODER	—	①	②	③	—	—	④	⑤	—	—
CASSETTE COMPARTMENT ASSY	—	①	②	③	—	—	④	⑤	—	—

PROCEDURE

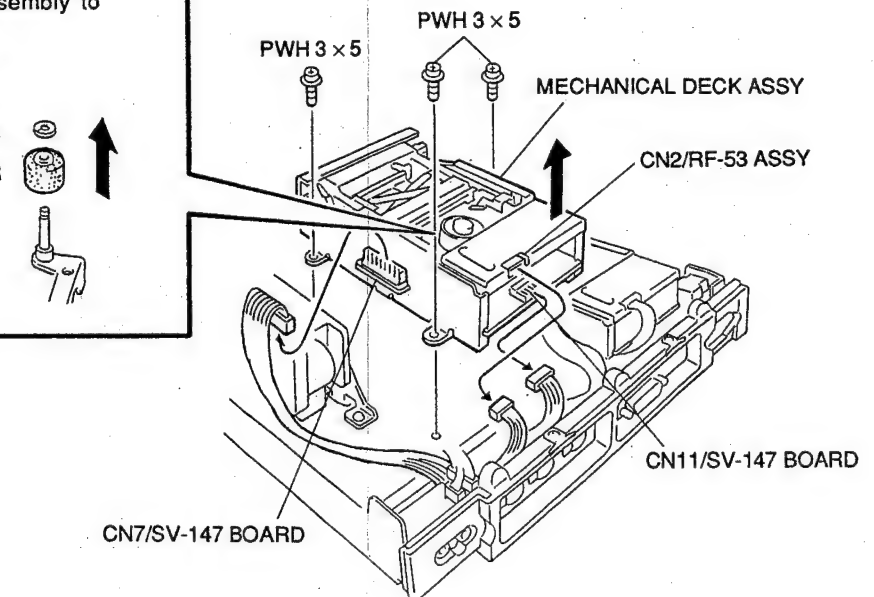
HC Roller, Mechanism Deck ASSY

Remove the top board.
(Refer to 1-1. "REPLACEMENT OF DC FAN MOTOR")

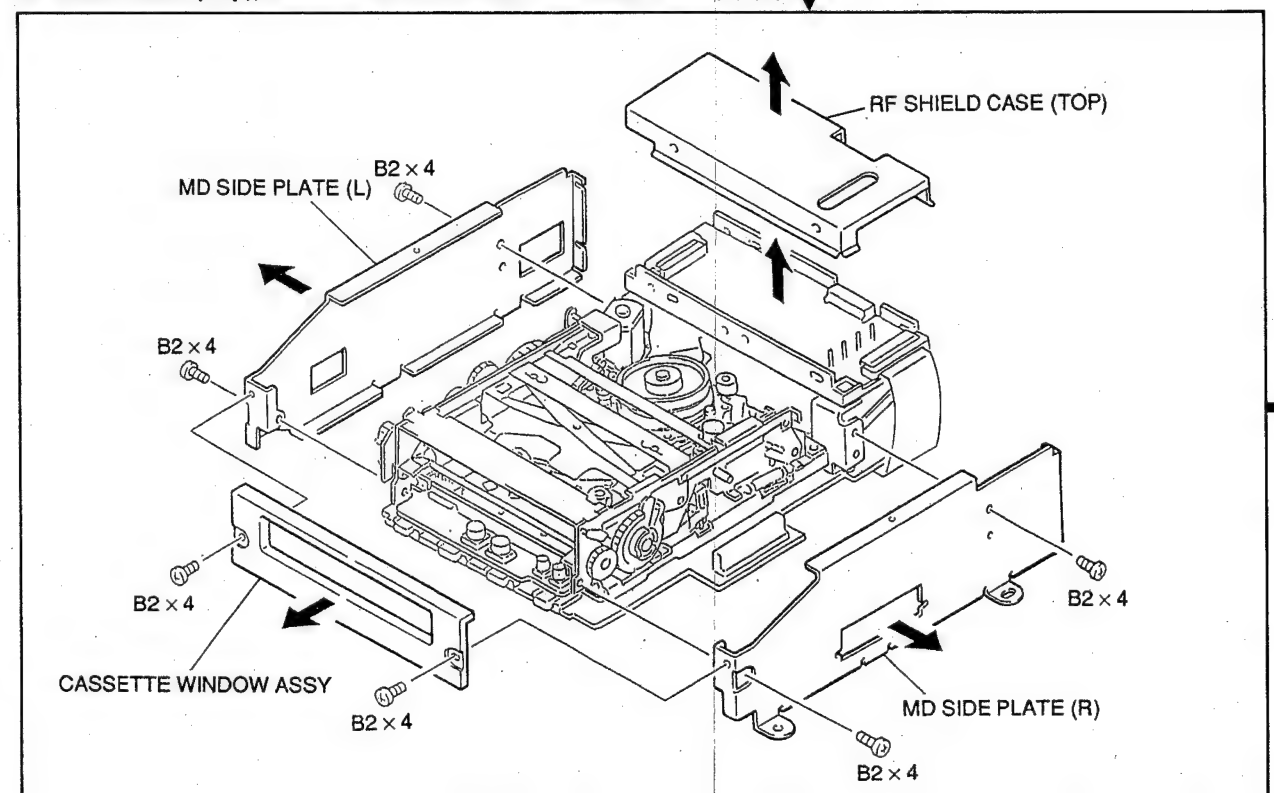
- Removing the HC roller.

Note: It is not necessary to remove the Mechanical Deck Assembly to replace the HC Roller.
When removing the HC roller, be careful not to scratch the drum.

STOPPER WASHER
HC ROLLER



RF Shield Case (Top), Cassette Window ASSY, MD side Plate (L)/(R)



第2章 メカデッキの交換および調整

2-1. メカデッキASSY およびメカデッキ部品(定期交換部品)の交換方法

定期交換部品(MAINTENANCE MANUAL Part 1. “4-2.”項参照)の交換は下表に従って行う。

- 定期交換部品を交換する際に、取り外す必要のある部品を○印で示す。
また、○印の中の数字は、取り外しの必要な部品の取り外し順序を表す。
- 部品の組立ては取り外しの逆の手順で行う。交換後は“2-2.調整および確認”を行う。

注意：作業は、POWERスイッチをOFFにして行う。

定期交換部品	取り外しの必要な部品									
	RF シールド ケース (上)	カセット 窓 ASSY	MD 側板 (L) ①	MD 側板 (R)	RF-53 ASSY ②	フレキ シールド 板	SV-147 基板	MD シールド 板	カセット コンパート メント ASSY	リール モーター
メカデッキ(PLAYER) ASSY	—	—	—	—	—	—	—	—	—	—
メカデッキ(RECORDER) ASSY	—	—	—	—	—	—	—	—	—	—
ドラムASSY (4ch) DOU-21A-R (PLAYER)	①	②	③	④	⑤	⑥	⑦	⑧	—	—
ドラムASSY (2ch) DOU-22A-R (RECORDER)	①	②	③	④	⑤	⑥	⑦	⑧	—	—
キャプスタンモータ、 U-21A	—	①	②	③	—	—	④	⑤	—	—
リールモータ	—	①	②	③	—	—	④	⑤	—	—
ピンチローラASSY	—	①	②	③	—	—	④	⑤	⑥	⑦
ドライブモータASSY	①	②	③	④	⑤	—	⑥	⑦	—	—
HCローラ	—	—	—	—	—	—	—	—	—	—
ロータリーエンコーダー	—	①	②	③	—	—	④	⑤	—	—
カセットコンパートメント ASSY	—	①	②	③	—	—	④	⑤	—	—

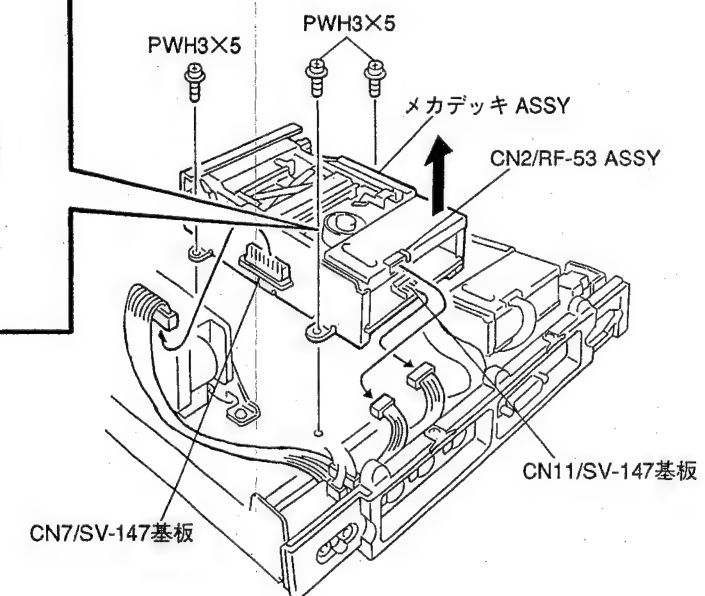
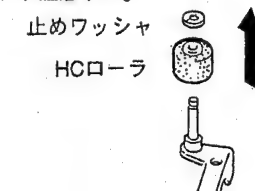
手順

HCローラ、メカデッキASSY

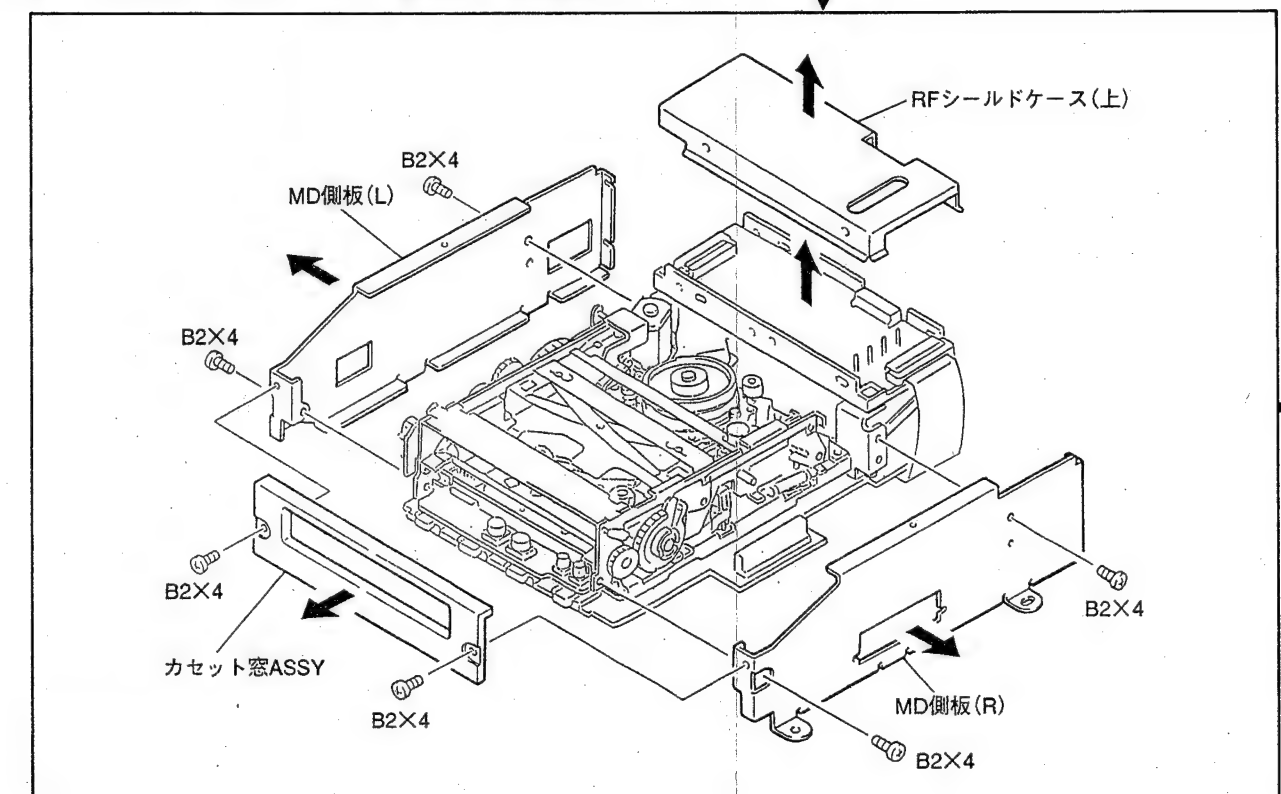
- 天板を外す。(1-1. DCファンモータの交換参照。)

- HCローラの取り外し
注意：HCローラの交換は、
メカデッキASSYを取り外す
必要はない。

HCローラを取り外す際は、ドラムに
傷を付けないよう注意する。



RFシールドケース(上)、カセット窓ASSY、MD側板(L)/(R)



2-2. ADJUSTMENTS AND CHECKS

After replacing the mechanical deck assembly and its parts (parts to be replaced periodically), perform adjustments and checks according to the Table A (next page).

When performing the adjustments and checks, use the unit's built-in service menu and mount the mechanical deck assembly onto the unit.

Setting the Service Menu

- (1) Set the BIT switches (S1) of the SV-147 board as follows.

S1/SV-147 board settings

S1-3 ; ON

S1-1, -2, -4 ; OFF

- (2) Turn on the power switch.
 (3) Press the **[SHIFT]** key + **[MODE]** key
 (4) simultaneously.
 (Setting the service menu)

EL display

SERVICE MENU			
1	PLAYER MECHANICAL DECK ADJUSTMENT		
2	RECORDER MECHANICAL DECK ADJUSTMENT		
3	TEST		
4	INFORMATION		
P-MD	R-MD	TEST	INFORM
F 1	F 2	F 3	F 4
F 5	F 6	F 7	

Note: F1 to F7; Function keys

- (4) When adjusting the PLAYER mechanical deck; Press the **[F1]** (P-MD) key.

When adjusting the RECORDER mechanical deck; Press the **[F2]** (R-MD) key.

EL display

(**Note:** The display is for RECORDER ADJUSTMENT)

RECORDER ADJUSTMENT		SERVO BOARD BIT SW
1	SERVO DATA PRESET	BIT1 OFF MAN EJECT
2	PLUNGER CHECK	BIT2 OFF EEPROM EN
3	MECHA DEVICE TEST	BIT3 ON ERROR CUT
4	RECOGNITION SWITCH CHECK	BIT4 OFF
5	END SENSOR LEVEL CHECK(HIGH)	
6	END SENSOR LEVEL CHECK(LOW)	
7	DEW SENSOR CHECK	
8	REEL TORQUE CHECK	
9	FWD/RVS TORQUE ADJUSTMENT	
10	DRAM/CAPSTAN SPEED & WOW CHECK	
MESSAGE		
RECORDER: STOP		
TEST ON EXIT		
F 1	F 2	F 3
F 4	F 5	F 6
F 7		

*: Mode setting keys for SERVICE MENU.

Key	Mode
[SHUTTLE]:	STILL
[PREVIOUS]:	SHUTTLE-16
[NEXT]:	SHUTTLE+16
[PCM SEARCH]:	SHUTTLE-1
[LOCATE]:	SHUTTLE+1
[1]:	SHUTTLE-8
[2]:	SHUTTLE+8
[4]:	SHUTTLE-2
[5]:	SHUTTLE+2
[7]:	SHUTTLE-0.2
[8]:	SHUTTLE+0.2

- (5) Using the **[↑]** and **[↓]** keys, select the desired adjustments according to Table A (select with the cursor "▷"), and perform "2-2-2. Adjustments and Checks in the Service Menu".

Exiting the Service Menu

(Returning to normal operations)

After the adjustments, carry out the following to return to the normal operation modes from the service menu.

- (1) Set the BIT switches (S1) of the SV-147 board as follows.
 S1-1, -2, -3, -4; All off
 (2) Turn off the power switch of the unit.
 (3) Turn on the power switch of the unit.

Table A: List of Adjustments

When the mechanical deck assembly and its parts (parts to be replaced periodically) have been replaced, the adjustments with the ○ must be performed.

Adjustments (Service Mode)	Parts Replaced										Others	
	Mechanical Deck Assembly	Drum Assembly	Cassette Compartment Assembly	Drive Motor Assembly	DC Motor Capstan	Reel Motor	Pinch Roller Assembly	Rotary Encoder	HC Roller		SV-147 ASSY (RP)	RF-53 ASSY (RP)
1. SERVO DATA PRESET												
2. PLUNGER CHECK						○						
3. MECHANICAL DEVICE TEST		○	○	○	○	○	○	○	○	○		
4. RECOGNITION SWITCH CHECK							○	○				
5. END SENSOR LEVEL CHECK (HIGH)			○							○		
6. END SENSOR LEVEL CHECK (LOW)			○							○		
7. DEW SENSOR CHECK												
8. REEL TORQUE CHECK						○						
9. FWD/REV TORQUE ADJUSTMENT						○				○		
10. DRUM/CAPSTAN SPEED & WOW CHECK		○										
11. TAPE PATH ADJUSTMENT		○			○	○	○					
12. SWP POSITION ADJUSTMENT		○								○		
13. PATH & FF/REW TIME CHECK		○			○	○	○					
14. PB ERROR RATE CHECK	○	○			○	○	○			○	○	
15. REC CURRENT ADJUSTMENT (LEADING)		○								○	○	
16. REC CURRENT ADJUSTMENT (TRAILING)		○								○	○	
17. REC/PB ERROR RATE CHECK	○	○								○	○	
18. SERVO DATA SAVE		○				○				○	○	
19. SERVO DATA DISPLAY												
2-2-3. Check when SV-147 board has been replaced										○		

2-2-1. Preparations

Equipment

Name	Specification	Equipment
Oscilloscope	• 4CH INPUT • DC to 150 MHz	TEKTRONIX 2445A or equivalent
Digital multimeter (Tester)	—	ADVANTEST R6341A or equivalent

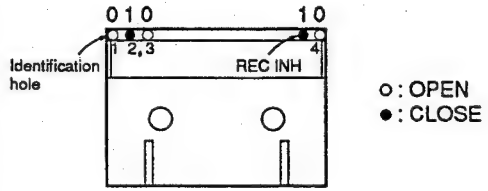
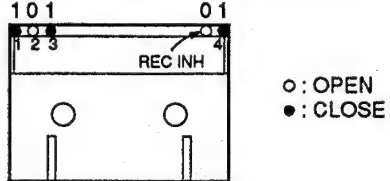
Tools

Name	Parts No.	Remarks
Adjusting Screwdriver	J-6225-100-A	For fine tape path adjustments
RF LEVEL CHECKER PD-817	J-6228-170-A	For adjustments of recording and playback systems
I/F box PF-534 for the RF LEVEL CHECKER	J-6405-340-A	For PCM-E7700

Test Tapes and Torque Cassettes

Name	Parts No.	Remarks
Test tape TY-711DX	8-909-825-00	For playback level check
Test tape TY-7251	8-909-813-00	For tracking adjustments
Test tape TY-30BX	8-892-332-38	For recording level adjustments (Blank tape)
Test tape TY-7212	8-960-081-01	For error rate check
Torque cassette TW-7131	8-909-708-71	For FWD/REV torque adjustment
Torque cassette TW-7231	8-909-708-72	For FF/REW torque check

Use the following test tapes which are available on the market according to the table.

Name	Method of Use
Blank cassette	No tape (remodel available cassette tapes)
Test tape (01010)	<p>Cassette tapes whose identification hole is as shown below (Remodel available DAT tapes)</p>  <p>○ : OPEN ● : CLOSE</p>
Test tape (10101)	<p>Cassette tapes whose identification hole is as shown below (Remodel the DAT tape available on the market)</p>  <p>○ : OPEN ● : CLOSE</p>
Test tape (end sensor LOW)	Any 120 min. tape on the market (Use from around the middle of the tape)
Test tape (TOP)	Any 120 min. tape on the market (Use from around the top of the tape)
Test tape (END)	Any 120 min. tape on the market (Use from around the end of the tape)
Test tape (FF/REW TIME)	Any 30 min. tape on the market (Use after recording the whole tape)

2-2-2. Adjustments and Checks in the Service Menu

1. SERVO DATA PRESET

Normally, this adjustment and check need not be performed when mechanical deck parts (parts to be replaced periodically) have been replaced.

Note: If servo data preset has been performed by mistake, turn off the power switch of the unit and then turn it on again.

Equipment and Tools: Not required

Test Tape: Not required

Procedure	Checks
<p>(1) Using the [↑] and [↓] keys, select "1. SERVO DATA PRESET".</p> <p>(2) Press the [F1] (TEST ON) key.</p> <p>(3) MESSAGE: PRESETTING IS COMPLETED! will be displayed on the EL display.</p> <p>(4) Press [F1] (TEST OFF) key. (Presetting ends)</p> <p>Note: Every time the [F1] key is pressed once, the unit sets to the TEST OFF (on the display) from the TEST ON state.</p>	<p>EL Display</p> <p>Note: The preset value displayed on the display may differ according to the version of the ROM used.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>RECORDER ADJUSTMENT 1. SERVO DATA PRESET</p> <p>SWP POSITION = 117 (75H) EQ-L-X1 = 64 (40H) REC-L-PCMA1 = 217 (D9H) EQ-H-X1 = 66 (42H) REC-L-PCMB1 = 217 (D9H) FWD TORQ T = 14 (0EH) EQ-Q-X1 = 59 (3BH) REC-L-ATFA1 = 16 (10H) FWD TORQ S = 128 (80H) EQ-P-X1 = 44 (2CH) REC-L-ATFB1 = 16 (10H) REV TORQ T = 65 (41H) REV TORQ S = 138 (8AH) EQ-L-X2 = 21 (15H) REC-T-PCMA1 = 217 (D9H) OFFSET TORQ = 56 (38H) EQ-H-X2 = 44 (2CH) REC-T-PCMB1 = 217 (D9H) EQ-Q-X2 = 37 (25H) REC-T-ATFA1 = 16 (10H) EQ-P-X2 = 21 (15H) REC-T-ATFB1 = 16 (10H) END T HIGH = 128 (80H) END S HIGH = 128 (80H) END T LOW = 00 (00H) END S LOW = 00 (00H)</p> <p>MESSEAGE</p> <div style="border: 1px solid black; padding: 5px; text-align: center; margin: 10px 0;"> PRESETTING IS COMPLETED! </div> <p>RECORDER: NO TAPE</p> <p>-----</p> <p>TEST OFF</p> </div> <p style="text-align: center;">F 1 F 2 F 3 F 4 F 5 F 6 F 7</p>

2. PLUNGER CHECK

Equipment and Tools: Not required

Test Tape: Not required

Procedure	Checks												
<p>(1) Using the [F1] and [F2] keys, select "2. PLUNGER CHECK".</p> <p>(2) Press the [F1] (TEST ON) key.</p> <p>(3) Check the sound produced when the plunger starts operating. Check the results displayed on the EL display.</p> <p>(4) Press [F1] (TEST OFF) key.</p>	<p>EL Display</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">RECORDER ADJUSTMENT</td><td style="width: 50%;">2. PLUNGER CHECK</td></tr> <tr> <td>PLUNGER KICK</td><td>PASS</td></tr> <tr> <td>PLUNGER RELEASE</td><td>PASS</td></tr> <tr> <td colspan="2">RECORDER: NO TAPE</td></tr> <tr> <td colspan="2">-----</td></tr> <tr> <td colspan="2">TEST OFF</td></tr> </table> </div> <p style="text-align: center;">F 1 F 2 F 3 F 4 F 5 F 6 F 7</p> <p>Results Displayed: PASS...Normal FAULT...Failure</p>	RECORDER ADJUSTMENT	2. PLUNGER CHECK	PLUNGER KICK	PASS	PLUNGER RELEASE	PASS	RECORDER: NO TAPE		-----		TEST OFF	
RECORDER ADJUSTMENT	2. PLUNGER CHECK												
PLUNGER KICK	PASS												
PLUNGER RELEASE	PASS												
RECORDER: NO TAPE													

TEST OFF													

3. MECHANICAL DEVICE TEST

Equipment and Tools: Not required

Test Tape: Blank cassette (Refer to "2-2-1. Preparations".)

Procedure	Checks																						
<p>(1) Using the [F1] and [F2] keys, select "3. MECHANICAL DEVICE TEST".</p> <p>(2) Press the [F1] (TEST ON) key.</p> <p>(3) Insert the blank cassette. The mechanical device test will be carried out and the results will be displayed on the display. After the display, the blank cassette will automatically be ejected.</p> <p>(4) After checking the display, press the [F1] (TEST OFF) key.</p>	<p>EL Display</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">RECORDER ADJUSTMENT</td><td style="width: 50%;">3. MECHANICAL DEVICE TEST</td></tr> <tr> <td>CASSETTE UP SWITCH</td><td>PASS</td></tr> <tr> <td>CASSETTE DOWN SWITCH</td><td>PASS</td></tr> <tr> <td>ROTARY ENCODER</td><td>PASS</td></tr> <tr> <td>DRUM MOTOR</td><td>PASS</td></tr> <tr> <td>CAPSTAN MOTOR</td><td>PASS</td></tr> <tr> <td>SUPPLY REEL MOTOR</td><td>PASS</td></tr> <tr> <td>TAKEUP REEL MOTOR</td><td>PASS</td></tr> <tr> <td colspan="2">RECORDER: NO TAPE</td></tr> <tr> <td colspan="2">-----</td></tr> <tr> <td colspan="2">TEST OFF</td></tr> </table> </div> <p style="text-align: center;">F 1 F 2 F 3 F 4 F 5 F 6 F 7</p> <p>Results Displayed: PASS...Normal FAULT...Failure</p> <p>Note: When the mechanical device test mode has been set, until it has been executed, the next mode cannot be set.</p>	RECORDER ADJUSTMENT	3. MECHANICAL DEVICE TEST	CASSETTE UP SWITCH	PASS	CASSETTE DOWN SWITCH	PASS	ROTARY ENCODER	PASS	DRUM MOTOR	PASS	CAPSTAN MOTOR	PASS	SUPPLY REEL MOTOR	PASS	TAKEUP REEL MOTOR	PASS	RECORDER: NO TAPE		-----		TEST OFF	
RECORDER ADJUSTMENT	3. MECHANICAL DEVICE TEST																						
CASSETTE UP SWITCH	PASS																						
CASSETTE DOWN SWITCH	PASS																						
ROTARY ENCODER	PASS																						
DRUM MOTOR	PASS																						
CAPSTAN MOTOR	PASS																						
SUPPLY REEL MOTOR	PASS																						
TAKEUP REEL MOTOR	PASS																						
RECORDER: NO TAPE																							

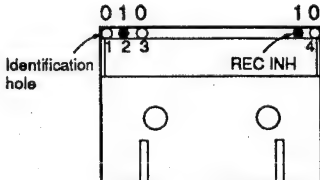
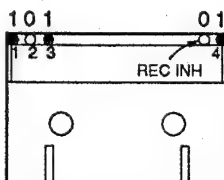
TEST OFF																							

4. RECOGNITION SWITCH CHECK

Equipment and Tools: Not required

Test Tape: Test tape (01010) (Refer to "2-2-1. Preparations".)

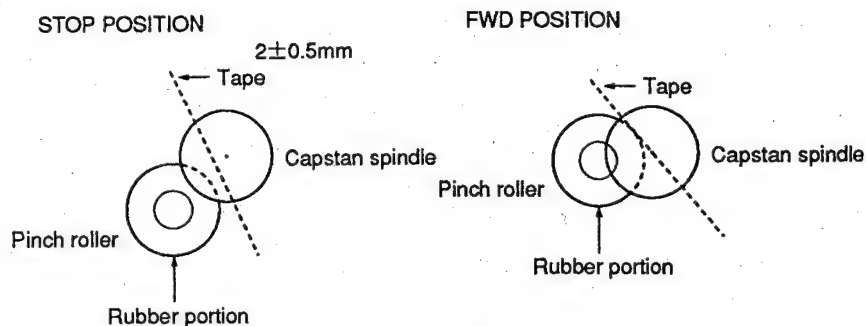
Test tape (10101) (Refer to "2-2-1. Preparations".)

Procedure	Checks/Specifications												
<p>(1) Using the [F1] and [F2] keys, select "4. RECOGNITION SWITCH CHECK".</p> <p>(2) Press the [F1] (TEST ON) key.</p> <p>(3) Insert the test tape (01010). Check that the results on the EL display and the identification hole of the test tape (01010) match.</p>	<p>EL display</p> <table border="1"> <thead> <tr> <th>RECORDER ADJUSTMENT</th><th>4. RECOGNITION SWITCH CHECK</th></tr> </thead> <tbody> <tr> <td>HOLE-1 (RESERVED)</td><td>OPEN (0)</td></tr> <tr> <td>HOLE-2 (THIN)</td><td>CLOSE (1)</td></tr> <tr> <td>HOLE-3 (WIDE)</td><td>OPEN (0)</td></tr> <tr> <td>HOLE-RECINH</td><td>CLOSE (1)</td></tr> <tr> <td>HOLE-4 (SOFT TAPE)</td><td>OPEN (0)</td></tr> </tbody> </table> <p>RECORDER: SBOFF</p> <hr/> <p>TEST OFF</p> <p>F 1 F 2 F 3 F 4 F 5 F 6 F 7</p>  <p>○: OPEN ●: CLOSE</p>	RECORDER ADJUSTMENT	4. RECOGNITION SWITCH CHECK	HOLE-1 (RESERVED)	OPEN (0)	HOLE-2 (THIN)	CLOSE (1)	HOLE-3 (WIDE)	OPEN (0)	HOLE-RECINH	CLOSE (1)	HOLE-4 (SOFT TAPE)	OPEN (0)
RECORDER ADJUSTMENT	4. RECOGNITION SWITCH CHECK												
HOLE-1 (RESERVED)	OPEN (0)												
HOLE-2 (THIN)	CLOSE (1)												
HOLE-3 (WIDE)	OPEN (0)												
HOLE-RECINH	CLOSE (1)												
HOLE-4 (SOFT TAPE)	OPEN (0)												
<p>(4) Press the [EJECT] key and eject the test tape (01010).</p> <p>(5) Insert the test tape (10101). Check that the results on the EL display and the identification hole of the test tape (10101) match.</p>	<p>EL display</p> <table border="1"> <thead> <tr> <th>RECORDER ADJUSTMENT</th><th>4. RECOGNITION SWITCH CHECK</th></tr> </thead> <tbody> <tr> <td>HOLE-1 (RESERVED)</td><td>CLOSE (1)</td></tr> <tr> <td>HOLE-2 (THIN)</td><td>OPEN (0)</td></tr> <tr> <td>HOLE-3 (WIDE)</td><td>CLOSE (1)</td></tr> <tr> <td>HOLE-RECINH</td><td>OPEN (0)</td></tr> <tr> <td>HOLE-4 (SOFT TAPE)</td><td>CLOSE (1)</td></tr> </tbody> </table> <p>RECORDER: SBOFF</p> <hr/> <p>TEST OFF</p> <p>F 1 F 2 F 3 F 4 F 5 F 6 F 7</p>  <p>○: OPEN ●: CLOSE</p>	RECORDER ADJUSTMENT	4. RECOGNITION SWITCH CHECK	HOLE-1 (RESERVED)	CLOSE (1)	HOLE-2 (THIN)	OPEN (0)	HOLE-3 (WIDE)	CLOSE (1)	HOLE-RECINH	OPEN (0)	HOLE-4 (SOFT TAPE)	CLOSE (1)
RECORDER ADJUSTMENT	4. RECOGNITION SWITCH CHECK												
HOLE-1 (RESERVED)	CLOSE (1)												
HOLE-2 (THIN)	OPEN (0)												
HOLE-3 (WIDE)	CLOSE (1)												
HOLE-RECINH	OPEN (0)												
HOLE-4 (SOFT TAPE)	CLOSE (1)												
<p>(6) Press the [PLAY] key.</p>	<p>Check: ① Check that the cleaning roller touches the drum and moves away immediately.</p> <p>② Check that the pinch roller presses against the capstan shaft and rotates.</p>												

(7) Press the **STOP** key.

Check: Check where the pinch roller stops.

Specification: Gap between capstan shaft and pinch roller = 1.5 mm to 2.5 mm



Check that the distance between the capstan spindle and the pinch roller is in the range of 1.5 to 2.5mm. (In this position, the rubber portion of the pinch roller is hidden under the capstan spindle cover.)

(8) Press the **F1** (TEST OFF) key.

The test tape (10101) will be ejected automatically.

5. END SENSOR LEVEL CHECK (HIGH)

Equipment and Tools: Not required

Test Tape: Blank cassette (Refer to "2-2-1. Preparations")

Procedure	Checks/Specifications
<p>(1) Using the F1 and F2 keys, select "5. END SENSOR LEVEL CHECK (HIGH)".</p> <p>(2) Press the F1 (TEST ON) key.</p> <p>(3) Insert the blank cassette. The sensor level will be displayed on the EL display. Check that the sensor level satisfies the specification.</p> <p>(4) Press the F1 (TEST OFF) key. The cassette will be ejected automatically.</p>	<p>EL display</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>RECORDER ADJUSTMENT 5. END SENSOR LEVEL CHECK(HIGH)</p> <p>T-END SENSOR LEVEL = X.XX V (XXH)</p> <p>S-END SENSOR LEVEL = X.XX V (XXH)</p> <p>RECORDER: SBOFF</p> <p>TEST OFF</p> </div> <p style="text-align: center;">F 1 F 2 F 3 F 4 F 5 F 6 F 7</p> <p>Specification: Sensor level: 1.0 V and higher</p>

6. END SENSOR LEVEL CHECK (LOW)

Equipment and Tools: Not required

Test Tape: Test tape (end sensor (LOW)) (Refer to "2-2-1. Preparations".)

Procedure	Checks/Specifications
<p>(1) Using the [↑] and [↓] keys, select "6. END SENSOR LEVEL CHECK (LOW)".</p> <p>(2) Press the [F1] (TEST ON) key.</p> <p>(3) Insert the test tape (end sensor (LOW)).</p> <p>Note: Use the test tape (end sensor (LOW)) around the center of the take up side. The sensor level will be displayed on the EL display. Check that the sensor level satisfies the specification.</p> <p>(4) Press [F1] (TEST OFF) key. The tape will be ejected automatically.</p>	<p>EL Display</p> <div style="border: 1px solid black; padding: 10px; margin: 10px;"> <p>RECORDER ADJUSTMENT 6. END SENSOR LEVEL CHECK (LOW)</p> <p>T-END SENSOR LEVEL = X.XX V (XXH) S-END SENSOR LEVEL = X.XX V (XXH)</p> <p>RECORDER: SBOFF</p> <p>-----</p> <p>TEST OFF</p> </div> <p style="text-align: center;">F 1 F 2 F 3 F 4 F 5 F 6 F 7</p> <p>Specification: Sensor level = Less than or equal 0.2V</p>

7. DEW SENSOR CHECK

Equipment and Tools: Not required

Test Tape: Not required

Procedure	Checks/Specifications
<p>(1) Using the [↑] and [↓] keys, select "7. DEW SENSOR CHECK".</p> <p>(2) Press the [F1] (TEST ON) key. The sensor level will be displayed on the EL display. Check that the sensor level satisfies the specification.</p> <p>(3) Press the [F1] (TEST OFF) key.</p>	<p>EL Display</p> <div style="border: 1px solid black; padding: 10px; margin: 10px;"> <p>RECORDER ADJUSTMENT 7. DEW SENSOR LEVEL CHECK</p> <p>DEW SENSOR LEVEL = X.XX V (XXH)</p> <p>RECORDER: NO TAPE</p> <p>-----</p> <p>TEST OFF</p> </div> <p style="text-align: center;">F 1 F 2 F 3 F 4 F 5 F 6 F 7</p> <p>Specification: Sensor level = 0.1 V <X.XX V<0.4 V Displayed level</p>

8. REEL TORQUE CHECK

Equipment and Tools: Not required

Test Tape: Torque cassette TW-7231

Procedure	Checks/Specifications
<p>(1) Using the [1] and [2] keys, select "8. REEL TORQUE CHECK".</p> <p>(2) Press the [F1] (TEST ON) key.</p> <p>(3) Insert the torque cassette (TW-7231).</p>	<p>EL Display (TEST ON display)</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>RECORDER ADJUSTMENT 8. REEL TORQUE CHECK</p> <p>CHECK OFF</p> <p>▷ REEL TORQUE CHECK FF L (1.5V)</p> <p>CHECK OFF</p> <p>REEL TORQUE CHECK REW L (1.5V)</p> <p>CHECK OFF</p> <p>REEL TORQUE CHECK FF H (4.3V)</p> <p>CHECK OFF</p> <p>REEL TORQUE CHECK FF L (4.3V)</p> <p>CHECK OFF</p> <p>OFFSET TORQUE</p> <p>RECORDER: SBOFF</p> <p>-----</p> <p>TEST OFF</p> </div> <p style="text-align: center;">F 1 F 2 F 3 F 4 F 5 F 6 F 7</p>
<p>(4) Using the [1] and [2] keys, select "REEL TORQUE CHECK FF L". Check that the torque value of the torque cassette (T-side reel) satisfies the specification (shown on the right side).</p>	<p>Note: T = TAKE UP reel side, S = SUPPLY reel side</p> <p>Specification: T-REEL torque = 0.0004 to 0.001 N-m (4 to 10 g-cm)</p>
<p>(5) Using the [1] and [2] keys, select "REEL TORQUE CHECK REW L". Check that the torque value of the torque cassette (S-side reel) satisfies the specification (shown on the right side).</p>	<p>Specification: S-REEL torque = 0.0004 to 0.001 N-m (4 to 10 g-cm)</p>
<p>(6) Using the [1] and [2] keys, select "REEL TORQUE CHECK FF H". Check that the torque value of the torque cassette (T-side reel) satisfies the specification (shown on the right side).</p>	<p>Specification: T-REEL torque = 0.0026 N-m and higher (26 g-cm and higher)</p>
<p>(7) Using the [1] and [2] keys, select "REEL TORQUE CHECK REW H". Check that the torque value of the torque cassette (S-side reel) satisfies the specification (shown on the right side).</p>	<p>Specification: S-REEL torque = 0.0026 N-m and higher (26 g-cm and higher)</p>
<p>(8) Press the [F1] (TEST OFF) key.</p> <p>The torque cassette will be ejected automatically.</p>	

Equipment and Tools: Not required
Test Tape: Torque cassette TW-7131

2-13 (E)

10. DRUM/CAPSTAN SPEED & WOW CHECK (10. Correct Rotation Check)

Equipment and Tools: Not required
Test Tape: Blank cassette (Refer to "2-2-1. Preparations".)

Procedure	Checks/Specifications
<div>(1) Using the [F1] and [F2] keys, select "10. DRUM/CAPSTAN SPEED & WOW CHECK".</div> <div>(2) Press the [F1] (TEST ON) key.</div> <div>(3) Insert the blank cassette.</div>	<div>EL Display</div> <div><div><div>RECORDER ADJUSTMENT10. DRUM/CAPSTAN SPEED & WOW CHECK</div><div>DRUM SPEED =2000 rpm</div><div>RECORDER: PLAY</div><div>TEST OFFSPEED</div></div><div>F 1F 2F 3F 4F 5F 6F 7</div></div>
<div>(4) Press the [PLAY] key.</div>	<div>Check: While rotating the drum in the clockwise direction slowly, check that the drum rotates correctly. (When the drum is stopped with your finger, it must rotate when you release your finger regardless of its position.)</div>

11. TAPE PATH ADJUSTMENT

Equipment and Tools:

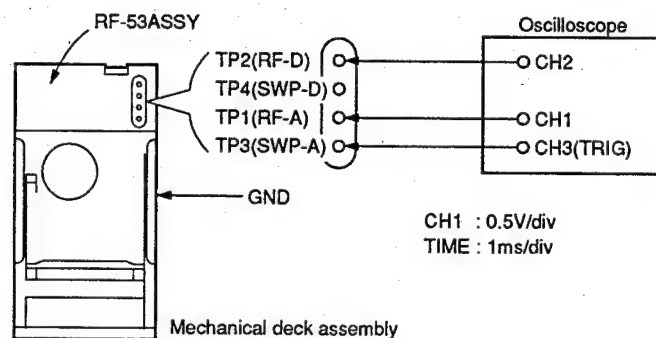
Oscilloscope

Adjusting screwdriver (J-6225-100-A)

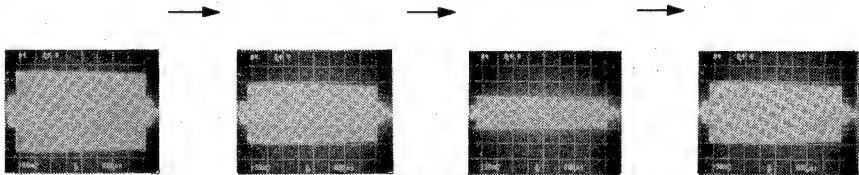
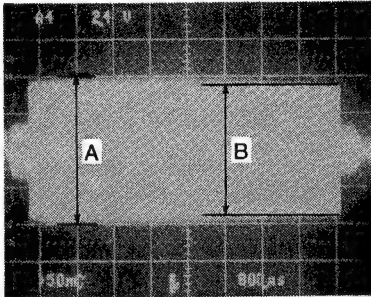
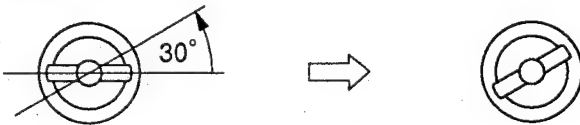
Test Tape:

Test tape TY-7251

Connection



Procedure	Checks/Specifications
<p>(1) Connect the oscilloscope to the following points of the RF-53 assembly.</p> <p><u>Oscilloscope</u> <u>RF-53 assembly</u></p> <p>CH1 → TP1 (RF-A)</p> <p>CH2 → TP2 (RF-D)</p> <p>(Only the recorder)</p> <p>CH3 → TP3 (SWP-A, TRIG)</p> <p>Connect the GND to the metal plate, etc. of the mechanism deck.</p> <p>(2) Using the [T] and [A] keys, select "11. TAPE PATH ADJUSTMENT".</p> <p>(3) Press the [F1] (TEST ON) key.</p> <p>(4) Insert the test tape (TY-7251).</p> <p>(5) Press the [PLAY] key.</p>	<p>EL Display</p> <p>RECORDER ADJUSTMENT 11. TAPE PATH ADJUSTMENT</p> <p>ATF OFFSET = 0%</p> <p>RECORDER: PLAY</p> <p>TEST OFF 0% 50% 100%</p> <p>F 1 F 2 F 3 F 4 F 5 F 6 F 7</p> <p>Specification: Adjust the RF waveform (TP1) so that it becomes square.</p> <p>RF waveform (TP1)</p> <p>Adjustment: Adjust the height of the S1 and T1 guides finely with the adjusting screwdriver (J-6225-100-A).</p>

<p>(6) Press the [F5] (100%) key. (ATF OFF)</p>	<p>Check: Check that the RF waveform (TP1) changes parallel.</p>  <p>Adjustment: Adjust the height of the S1 and T1 guides so that the RF waveform changes parallel.</p>
<p>(7) Press the [F4] (50%) key. (ATF OFFSET)</p>	<p>Check: Check that the RF waveform (TP1) satisfies the following specification.</p> <p>Specification: The RF waveform becomes rectangular at its 50% height. Distortion including fluctuations should be within 10% against the flat part.</p>  <p>RF waveform (TP1)</p> <p>Specification: $\frac{B}{A} \times 100(\%) \geq 80\%$</p>
<p>(8) Press the [F3] (0%) key. (ATF ON)</p> <p>(9) Press the SHUTTLE (–16) ([PREVIOUS] key).</p> <p>(10) Check the rising time of the RF waveform when press the [PLAY] key.</p>	<p>Check (specification): The RF waveform (TP1) becomes stable within two seconds.</p>
<p>(11) Press the [EJECT] key and eject the test tape.</p> <p>(12) Insert the test tape (TY-7251), press the [PLAY] (PLAY mode) key, and check the rising time of the RF waveform (PLAY mode).</p>	<p>Check (Specification): The RF waveform becomes stable within 2 seconds.</p>
<p>(13) Press the [F1] (TEST OFF) key. The test tape (TY-7251) will be ejected automatically.</p>	
<p>(14) Adjust the height of S1 guide for the PLAYER mechanical deck.</p>	<p>Adjustment: Rotate the S1 guide 30° in the counterclockwise direction using the adjustment driver (J-6225-100-A).</p>  <p>S1 guide</p>

13. PATH & FF/REW TIME CHECK

Equipment and Tools:

Oscilloscope

Test Tape:

Test tape (TOP) (Refer to "2-2-1. Preparations".)

Test tape (END) (Refer to "2-2-1. Preparations".)

Test tape (FF/REW TIME) (Refer to "2-2-1. Preparations".)

Connection

Same as "11. TAPE PATH ADJUSTMENT".

Procedure	Adjustments/Checks/Specifications
<p>(1) Connect the oscilloscope to the following points of the RF-53 assembly.</p> <p>Oscilloscope RF-53 ASSY</p> <p>CH1 → TP1 (RF-A)</p> <p>CH3 → TP3 (SWP-A, TRIG)</p> <p>(2) Using the [↑] and [↓] keys, select "13. FF/REW TIME CHECK".</p> <p>(3) Press the [F1] (TEST ON) key.</p> <p>(4) Insert the test tape (TOP).</p>	<p>EL Display</p> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;"> <p>RECORDER ADJUSTMENT 13. PATH & FF/REW TIME CHECK</p> <p>FF TIME = 0 SEC</p> <p>REW TIME = 0 SEC</p> <p>RECORDER: NO TAPE</p> <p>-----</p> <p>TEST OFF</p> </div> <p style="text-align: center;">F 1 F 2 F 3 F 4 F 5 F 6 F 7</p>
<p>(5) Repeat pressing SHUTTLE (+1) ([LOCATE] key) and SHUTTLE (-1) ([PGM SEARCH] key) alternately. Check that the tape running satisfies the specification.</p>	<p>Specification: The tape should not be curled and not come off the guides before and after the pinch roller.</p>
<p>(6) Repeat pressing SHUTTLE (+16) ([NEXT] key) and SHUTTLE (-16) ([PREVIOUS] key) alternately. Check that the tape running satisfies the specification.</p>	<p>Specification: The tape should not be curled and not come off the guides before and after the pinch roller.</p>
<p>(7) Press the EJECT key and eject the test tape (TOP).</p> <p>(8) Insert the test tape (END).</p> <p>(9) Repeat pressing SHUTTLE (+1) ([LOCATE] key) and SHUTTLE (-1) ([PGM SEARCH] key) alternately. Check that the tape running satisfies the specification.</p>	<p>Specification: The tape should not be curled and not come off the guides before and after the pinch roller.</p>

<p>(10) Repeat pressing SHUTTLE (+16) (NEXT key) and SHUTTLE (-16) (PREVIOUS key) alternately.</p> <p>Check that the tape running satisfies the specification.</p>	<p>Specification: The tape should not be curled and not come off the guides before and after the pinch roller.</p>
<p>(11) Press the EJECT key and eject the test tape (END).</p> <p>(12) Insert the test tape (FF/REW TIME).</p> <p>(13) Fast forward and rewind the tape with the REW key or FF key and check that the tape rewind time satisfies the specification.</p>	<p>Specification: Take up time of tape fast forwarded = Less than 20 seconds.</p> <p>Take up time of tape rewind = Less than 20 seconds.</p> <p>Check with the RF waveform of the oscilloscope that the tape contacts the head correctly during FF and REW.</p>
<p>(14) Press the F1 (TEST OFF) key.</p> <p>The test tape (FF/REW TIME) will be ejected automatically.</p>	

14. PB ERROR RATE CHECK

Equipment and Tools: Oscilloscope

Test Tape: Test tape TY-7212

- Note:** 1. Be sure to mount the top plate when measuring the error rate.
2. Before performing checks, use the cleaning tape and clean for ten seconds.

Procedure	Adjustments/Checks/Specifications
<p>(1) Using the F1 and F2 keys, select "14. PB ERROR RATE CHECK".</p> <p>(2) Press the F1 (TEST ON) key.</p> <p>(3) Insert the test tape (TY-7212).</p>	<p>EL Display</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>RECORDER ADJUSTMENT 14. PB ERROR RATE CHECK</p> <p><input type="checkbox"/> EQ-X1-L = 64 (40H) PB SPEED X1</p> <p>EQ-X1-H = 66 (42H) PB HEAD LEADING</p> <p>EQ-X1-Q = 59 (3BH) ERROR RATE A-CH X.XE-X</p> <p>EQ-X1-P = 44 (2CH) B-CH X.XE-X</p> <p>EQ-X2-L = 21 (15H)</p> <p>EQ-X2-H = 44 (2CH)</p> <p>EQ-X2-Q = 37 (25H)</p> <p>EQ-X2-P = 21 (15H)</p> <p>RECORDER: PLAY TIME CODE: 00:10:58:40</p> <p>TEST OFF HEAD ↑ ↓</p> </div> <p style="text-align: center;">F 1 F 2 F 3 F 4 F 5 F 6 F 7</p>
<p>(4) Press the PLAY key and check that the specification is satisfied.</p>	<p>Specification: Playback error rate A-CH = Less than or equal 5×10</p> <p>(Display: Less than or equal 5E-3)</p> <p>Playback error rate B-CH = Less than or equal 5×10</p> <p>(Display: Less than or equal 5E-3)</p>

<p>(5) Press the [STOP] key.</p> <p>(6) Using the [↑] and [↓] keys, select "EQ-X2-L". (Normal speed × 2 mode)</p> <p>(7) Press the [PLAY] key and check that the specification is satisfied.</p>	<p>Specification: Playback error rate A-CH = Less than or equal 5×10 (Display: Less than or equal 5E-3) Playback error rate B-CH = Less than or equal 5×10 (Display: Less than or equal 5E-3)</p>
<p>(8) Press the [STOP] key.</p> <p>Note: Press the [F1] (TEST OFF) key for the PLAYER deck. The test tape will be ejected automatically. (End of check for the PLAYER deck)</p>	
<p>The following check is for the RECORDER deck only.</p> <p>(9) Press the [F4] (HEAD) key and check that "PB HEAD TRAILING" is displayed.</p> <p>(10) Press the [PLAY] key and check that the specification is satisfied.</p>	<p>Specification: Playback error rate A-CH = Less than or equal 5×10 (Display: Less than or equal 5E-3)</p> <p>Specification: Playback error rate B-CH = Less than or equal 5×10 (Display: Less than or equal 5E-3)</p>
<p>(11) Press the [STOP] key.</p> <p>(12) Using the [↑] and [↓] keys, select "EQ-X1-P". (Normal speed mode)</p> <p>(13) Press the [PLAY] key and check that the specification is satisfied.</p>	<p>Specification: Playback error rate A-CH = Less than or equal 5×10 (Display: Less than or equal 5E-3) Playback error rate B-CH = Less than or equal 5×10 (Display: Less than or equal 5E-3)</p>
<p>(14) Press the [STOP] key.</p> <p>(15) Connect the oscilloscope to the following points of the RF-53 assembly.</p> <p>Oscilloscope RF-53 ASSY</p> <p> < For RECORDER ></p> <p> CH1 → TP2 (RF-D)</p> <p> CH3 → TP4 (SWP-D, TRIG)</p> <p> < For PLAYER ></p> <p> CH1 → TP1 (RF-A)</p> <p> CH3 → TP3 (SWP-A, TRIG)</p> <p>(16) Press the SHUTTLE (–2) ([4] key).</p>	<p>Check: Check that the RF waveform (TP-2) satisfies the following specification.</p> <p>Specification: The RF waveform rises within two seconds.</p> <div data-bbox="501 1563 1219 1702" data-label="Diagram"> <p style="text-align: right;"> $\frac{B}{A} \geq \frac{5}{10}$ $\frac{C}{A} \geq \frac{5}{10}$ </p> </div> <p>Check that the waveform is stable for ten seconds.</p>
<p>(17) Press the [REW] key.</p> <p>(18) Press the SHUTTLE (–2) ([4] key).</p>	<p>Check that the above specifications are satisfied.</p>
<p>(19) Press the [F1] (TEST OFF) key. The test tape (TY-7212) will be ejected automatically.</p>	

15. REC CURRENT ADJUSTMENT (LEADING) (RECORDER deck only)

Equipment and Tools:

Oscilloscope
RF level checker PD-817
I/F box PF-534 for the RF level checker

Test Tape:

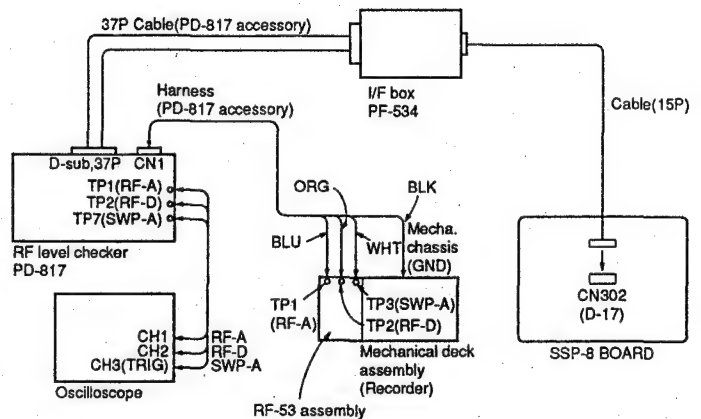
Test tape TY-7111DX
Test tape TY-30BX

Connection

Connect the parts with the power switch of PCM-E7700 off.

Remove the key panel assembly when connecting the RF-534 cable (15P) to CN302 on the SSP-8 board.

When performing adjustments, make sure that the cable (15P) is not caught and the key panel assembly is attached to the unit.



Procedure	Adjustments/Checks/Specifications																												
<p>(1) Using the [F1] and [F2] keys, select "15. REC CURRENT ADJUSTMENT (LEADING)".</p> <p>(2) Press the [F1] (TEST ON) key.</p> <p>(3) Insert the test tape (TY-7111DX).</p> <p>(4) According to the calibration values table attached to the test tape, set the calibration value with the OFF SET dial of the RF level checker (PD-817).</p> <p>(5) Press the [PLAY] key. Check that the RF waveform (oscilloscope) is stable.</p> <p>(6) Press the [CAL] key of the RF level checker (PD-817).</p> <p>(7) After completing CAL, and the LED of the [CAL] key stops blinking and lights up, press the [EJECT] key and eject the test tape (TY-7111DX).</p>	<p>EL Display</p> <table><tr><th colspan="2">RECORDER ADJUSTMENT</th><th colspan="2">15. REC CURRENT ADJUSTMENT(LEADING)</th></tr><tr><td>REC CURRENT</td><td>PCM-A</td><td>XXX (XXH)</td><td></td></tr><tr><td>REC CURRENT</td><td>PCM-B</td><td>XXX (XXH)</td><td></td></tr><tr><td>REC CURRENT</td><td>ATF-A</td><td>XXX (XXH)</td><td></td></tr><tr><td>REC CURRENT</td><td>ATF-B</td><td>XXX (XXH)</td><td></td></tr><tr><td colspan="2">RECORDER: REC</td><td colspan="2">TIME CODE: 00 : 10 : 58 : 40</td></tr><tr><td colspan="2">TEST OFF</td><td colspan="2">↑ ↓</td></tr></table> <p>F 1 F 2 F 3 F 4 F 5 F 6 F 7</p>	RECORDER ADJUSTMENT		15. REC CURRENT ADJUSTMENT(LEADING)		REC CURRENT	PCM-A	XXX (XXH)		REC CURRENT	PCM-B	XXX (XXH)		REC CURRENT	ATF-A	XXX (XXH)		REC CURRENT	ATF-B	XXX (XXH)		RECORDER: REC		TIME CODE: 00 : 10 : 58 : 40		TEST OFF		↑ ↓	
RECORDER ADJUSTMENT		15. REC CURRENT ADJUSTMENT(LEADING)																											
REC CURRENT	PCM-A	XXX (XXH)																											
REC CURRENT	PCM-B	XXX (XXH)																											
REC CURRENT	ATF-A	XXX (XXH)																											
REC CURRENT	ATF-B	XXX (XXH)																											
RECORDER: REC		TIME CODE: 00 : 10 : 58 : 40																											
TEST OFF		↑ ↓																											

<p>(8) Insert the test tape (TY-30BX, blank area).</p> <p>(9) Press the LEADING (A/B) key of the RF level checker (PD-817). The PCM/ATF (Ach, Bch) recording current level of the leading head will be measured automatically (Self recording and playback).</p> <p>(10) After measuring, the indicator of the LEADING key will stop blinking and light up and the recording level will be displayed on the level meter of the RF level checker. Repeat steps (8), (9), and (10) so that the recording level satisfies the specification.</p>	<p>Specification: PCM-A and PCM-B recording level = 0.5 ± 0.5 dB ATF-A and ATF-B recording level = -0.5 ± 0.5 dB</p> <p>RF Level Checker Level Meter Display</p> <p>Adjustment: Using the ↑ and ↓ keys, select values that do not satisfy the specification, and adjust with the F6 and F7 keys as follows. To raise the recording level: Press the F6 (UP) key To lower the recording level: Press the F7 (DOWN) key</p>
<p>(11) Press the F1 (TEST OFF) key. The test tape (TY-30BX) will be ejected automatically.</p>	

*1: Setting of the offset dial

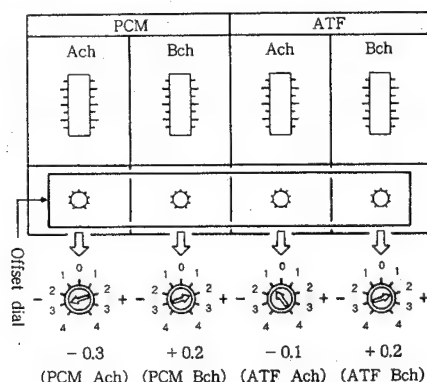
According to the table of calibration values attached to the test tape (TY-7111DX), set the calibration values of the 1.57 MHz and 130 kHz Ach/Bch with the RF level checker offset dial.

Setting Example

Display of Calibration Values

	130.7 (kHz)	1.568 (MHz)
Ach	0.1	-0.3
Bch	+0.2	+0.2

Setting the offset dial (For the above calibration values)



16. REC CURRENT ADJUSTMENT (TRAILING) (RECORDER deck only)

Equipment and Tools:

Oscilloscope
RF level checker PD-817
I/F box PF-534 for the RF LEVEL CHECKER

Test Tape:

Test tape TY-30BX
Test tape TY-7111DX

Connection

Same as "15. REC CURRENT ADJUSTMENT (LEADING)".

Procedure	Adjustments/Checks/Specifications										
<p>(1) Using the [1] and [2] keys, select "16. REC CURRENT ADJUSTMENT (TRAILING)".</p> <p>(2) Press the [F1] (TEST ON) key.</p> <p>(3) Insert the test tape (TY-7111DX).</p> <p>(4) According to the table of calibration values attached to the test tape, set the calibration value with the OFF SET dial of the RF level checker (PD-817). * (Refer to page 2-22).</p> <p>(5) Press the [PLAY] key. Check that the RF waveform (oscilloscope) is stable.</p> <p>(6) Press the [CAL] key of the RF level checker (PD-817).</p> <p>(7) After completing CAL, and the LED of the [CAL] key stops blinking and lights up, press the [EJECT] key and eject the test tape.</p>	<p>EL Display</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-bottom: 1px solid black;">RECORDER ADJUSTMENT</td> <td style="width: 50%; border-bottom: 1px solid black;">16. REC CURRENT ADJUSTMENT (TRAILING)</td> </tr> <tr> <td>REC CURRENT PCM-A</td> <td>XX</td> </tr> <tr> <td>REC CURRENT PCM-B</td> <td>XX</td> </tr> <tr> <td>REC CURRENT ATF-A</td> <td>XX</td> </tr> <tr> <td>REC CURRENT ATF-B</td> <td>XX</td> </tr> </table> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> RECORDER: REC TIME CODE: 00:10:58:40 </div> <hr style="border: 0.5px dashed black;"/> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> TEST OFF ↑ ↓ </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> F 1 F 2 F 3 F 4 F 5 F 6 F 7 </div>	RECORDER ADJUSTMENT	16. REC CURRENT ADJUSTMENT (TRAILING)	REC CURRENT PCM-A	XX	REC CURRENT PCM-B	XX	REC CURRENT ATF-A	XX	REC CURRENT ATF-B	XX
RECORDER ADJUSTMENT	16. REC CURRENT ADJUSTMENT (TRAILING)										
REC CURRENT PCM-A	XX										
REC CURRENT PCM-B	XX										
REC CURRENT ATF-A	XX										
REC CURRENT ATF-B	XX										

(8) Insert the test tape
(TY-30BX, blank area).

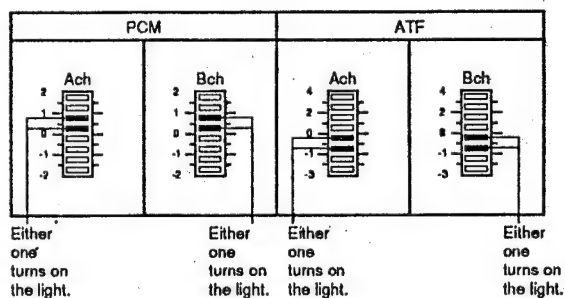
(9) Press the **TRAILING (A/B)**
key of the RF level checker
(PD-817). The PCM/ATF (Ach,
Bch) recording current level of the
trailing head will be measured
automatically (Self recording and
playback).

(10) After measuring, the indicator of the
TRAILING key will stop blinking and
light up and the recording level will be
displayed on the level meter of the RF
level checker. Repeat steps (8), (9),
and (10) so that the recording level
satisfies the specification.

(11) Press the **F1** (TEST OFF) key.
The test tape (TY-30BX) will be
ejected automatically.

Specification: PCM-A and PCM-B recording level = 0.5 ± 0.5 dB
ATF-A and ATF-B recording level = -0.5 ± 0.5 dB

RF Level Checker Level Meter Display



Adjustment: Using the **↑** and **↓** keys, select values that do
not satisfy the specification, and adjust with
the **F6** and **F7** keys as follows.
To raise the recording level: Press the **F6** (UP) key
To lower the recording level: Press the **F7** (DOWN) key

17. REC/PB ERROR RATE CHECK

Equipment and Tools:

Not required

Test Tape:

Test tape TY-30BX

- Note:** 1. Be sure to mount the top plate when measuring the REC/PB ERROR RATE.
2. Before performing checks, clean the head with a cleaning tape.

Procedure	Adjustments/Checks/Specifications
<p>(1) Using the [F1] and [F2] keys, select "17. REC/PB ERROR RATE CHECK".</p> <p>(2) Press the [F1] (TEST ON) key.</p> <p>(3) Insert the test tape (TY-30BX).</p> <p>(4) Check that "REC HEAD LEADING" is displayed.</p>	<p>EL Display</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>RECORDER ADJUSTMENT 17. REC/PB ERROR RATE CHECK</p> <p>REC SPEED X1</p> <p>REC HEAD LEADING</p> <p>ERROR RATE A-CH X.XE-X (TRAILING) B-CH X.XE-X</p> <p>RECORDER: REC TIME CODE: 00:10:58:40</p> <p>TEST OFF SPEED HEAD</p> </div> <p style="text-align: center;">F 1 F 2 F 3 F 4 F 5 F 6 F 7</p>
<p>(5) Press the [PLAY] key.</p> <p>(6) Press the [AUDIO EDIT] key and check that the error rate of the trailing head playback during the leading head recording (X1) satisfies the specification.</p>	<p>Specification: Error rate A-CH = 5E-3 (Display) (Less than or equal 5 × 10) B-CH = 5E-3 (Display) (Less than or equal 5 × 10)</p>
<p>(7) Press the [STOP] key.</p> <p>(8) Press the [F3] (SPEED) key and select "REC SPEED X2".</p> <p>(9) Press the [PLAY] key.</p> <p>(10) Press the [AUDIO EDIT] key and check that the error rate of the trailing head playback during the leading head recording (X1) satisfies the specification.</p>	<p>Specification: Error rate A-CH = 5E-3 (Display) (Less than or equal 5 × 10) B-CH = 5E-3 (Display) (Less than or equal 5 × 10)</p>
<p>(11) Press the [STOP] key.</p> <p>(12) Press the [F3] (SPEED) key and select "REC SPEED X1".</p> <p>(13) Press the [F4] (HEAD) key and check that "REC HEAD TRAILING" is displayed.</p> <p>(14) Press the [PLAY] key.</p> <p>(15) Press the [AUDIO EDIT] key and record for twenty seconds.</p> <p>(16) Press the [STOP] key.</p>	

<p>(17) Press SHUTTLE (-2) ([4] key) and rewind until the part where recording starts.</p> <p>Note: Rewind according to the TIME CODE displayed.</p> <p>(18) Press the [PLAY] key, playback the trailing head recording part, and check that the playback error rate satisfies the specification.</p>	<p>Specification: Error rate A-CH = 5E-3 (Display) (Less than or equal 5 × 10)</p> <p>B-CH = 5E-3 (Display) (Less than or equal 5 × 10)</p>
<p>(19) Press the [STOP] key.</p> <p>(20) Press the [F1] (TEST OFF) key.</p> <p>The test tape (TY-30BX) will be ejected automatically.</p>	

18. SERVO DATA SAVE

Equipment and Tools: Not required

Test Tape: Not required

Procedure	Checks
<p>(1) Turn on the S1-2 (BIT SW2) switch of the SV-147 board and check that it is on at the top right of the display (Menu of adjustments).</p>	
<p>(2) Using the [↑] and [↓] keys, select "18. SERVO DATA SAVE".</p>	<p>EL Display</p>
<p>(3) Press the [F1] (TEST ON) key.</p> <p>Check that "MESSAGE: SAVING IS COMPLETED!" is displayed.</p>	<div data-bbox="635 1332 1292 1859"> <div> RECORDER ADJUSTMENT 18. SERVO DATA SAVE </div> <div> SWP POSITION = 117 (75H) EQ-L-X1 = 64 (40H) REC-L-PCMA1 = 217 (D9H) EQ-H-X1 = 66 (42H) REC-L-PCMB1 = 217 (D9H) FWD TORQ T = 14 (0EH) EQ-Q-X1 = 59 (3BH) REC-L-ATFA1 = 16 (10H) FWD TORQ S = 128 (80H) EQ-P-X1 = 44 (2CH) REC-L-ATFB1 = 16 (10H) REV TORQ T = 65 (41H) REV TORQ S = 138 (8AH) EQ-L-X2 = 21 (15H) REC-T-PCMA1 = 217 (D9H) BACK TENTION = 56 (38H) EQ-H-X2 = 44 (2CH) REC-T-PCMB1 = 217 (D9H) EQ-Q-X2 = 37 (25H) REC-T-ATFA1 = 16 (10H) EQ-P-X2 = 21 (15H) REC-T-ATFB1 = 16 (10H) END T HIGH = 128 (80H) END S HIGH = 128 (80H) END T LOW = 00 (00H) END S LOW = 00 (00H) </div> <div> MESSAGE <div>SAVING IS COMPLETED!</div> </div> <div> RECODER: NO TAPE ----- TEST OFF </div> </div>
<p>(4) After checking, press the [F1] (TEST OFF) key.</p> <p>(5) Set the S1 switch of the SV-147 board as follows.</p> <p>S1-1 to S1-4: All off</p>	<div> F 1 F 2 F 3 F 4 F 5 F 6 F 7 </div>

19. SERVO DATA DISPLAY

Equipment and Tools: Not required

Test Tape: Not required

Note: The servo data display is used for checking the servo data.

By executing it during adjustments, adjustment values can be checked even without saving.

Procedure	Check
<p>(1) Using the F1 and F2 keys, select "19. SERVO DATA DISPLAY".</p> <p>(2) Press the F1 (TEST ON) key.</p> <p>(3) Check the servo data on the display.</p> <p>(4) Press the F2 (EXIT) key.</p>	<p>EL Display</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p style="text-align: center;">RECORDER ADJUSTMENT 19. SERVO DISPLAY</p> <p>SWP POSITION = 117 (75H) EQ-L-X1 = 64 (40H) REC-L-PCMA1 = 217 (D9H) EQ-H-X1 = 66 (42H) REC-L-PCMB1 = 217 (D9H) FWD TORQ T = 14 (0EH) EQ-Q-X1 = 59 (3BH) REC-L-ATFA1 = 16 (10H) FWD TORQ S = 128 (80H) EQ-P-X1 = 44 (2CH) REC-L-ATFB1 = 16 (10H) REV TORQ T = 65 (41H) REV TORQ S = 138 (8AH) EQ-L-X2 = 21 (15H) REC-T-PCMA1 = 217 (D9H) BACK TENTION = 56 (38H) EQ-H-X2 = 44 (2CH) REC-T-PCMB1 = 217 (D9H) EQ-Q-X2 = 37 (25H) REC-T-ATFA1 = 16 (10H) EQ-P-X2 = 21 (15H) REC-T-ATFB1 = 16 (10H) END T HIGH = 128 (80H) END S HIGH = 128 (80H) END T LOW = 00 (00H) END S LOW = 00 (00H)</p> <p>RECORDER: NO TAPE</p> <p style="text-align: center;">-----</p> <p style="text-align: center;">EXIT</p> </div> <p style="text-align: center;">F 1 F 2 F 3 F 4 F 5 F 6 F 7</p>

2-2-3. CHECKS AFTER SV-147 BOARD REPLACEMENT

Be sure to perform the following checks after replacing the SV-147 board and before mounting the mechanical deck assembly.

Equipment and Tools:

Not required

Test Tape:

Blank cassette (Refer to "2-2-1. Preparations".)

Servo Microprocessor Operations Check

- (1) Turn on the BIT switch (S1-3) of the SV-147 board.
- (2) Turn on the power of the unit.
- (3) Check that the LED (D1) of the SV-147 board blinks every second.
- (4) Insert the blank cassette and turn on the BIT switch (S1-1) of the SV-147 board.
- (5) Check that the blank cassette is ejected and turn off the BIT switch (S1-1).

After completing the above, adjust and check according to "2-2. Adjustments and Checks".

SECTION 3

ELECTRICAL ALIGNMENT

This section describes the electrical adjustments that need to be carried out when repairing and servicing the ADA-31 board.

Carry out the following adjustments for the ADA-31 board.

Adjustments

3-1. A/D, D/A Adjustments (ADA-31 Board)

3-1-1. A/D Conversion Level Adjustment



3-1-2. D/A Conversion Level Adjustment

Equipment Used

Name	Specification	Equipment
Audio analyzer	<ul style="list-style-type: none">• AF oscillator Range: 10 to 100 kHz Level: -70 to +24 dBm• Distortion analyzer (Level meter)	TEKTRONIX SG505 (OP2) AA501 or equivalent

3-1. A/D, D/A ADJUSTMENTS (ADA-31 BOARD)

Preparations:

- Remove the top board and key assembly to carry out this adjustment.

But do not disconnect the harness from the key assembly.
(For details of removing them, refer to "Maintenance Manual Part 1")

- After setting the mode according to the following procedure, carry out the adjustments.

(For details of setting, refer to "OPERATION GUIDE")

Procedure:

- (1) Call "FACTORY SETTING" (factory setting data) at the SET UP mode (EL display) (SUB MODE: SYSTEM).

- (2) Set the SUB MODE: EXT ANALOG (external input mode) of the MANUAL REC mode (EL display).

Carry out the following adjustments in this mode.

3-1-1. A/D Conversion Level Adjustment

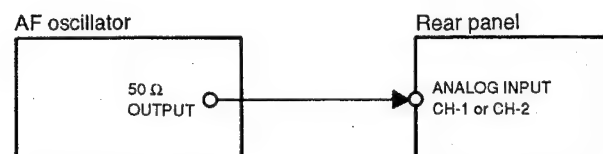
Carry out the electrical adjustment of the A/D block of the ADA-31 board.

Carry this out first when the ADA-31 board has been replaced and then carry out "3-1-2. D/A Conversion Level Adjustment".

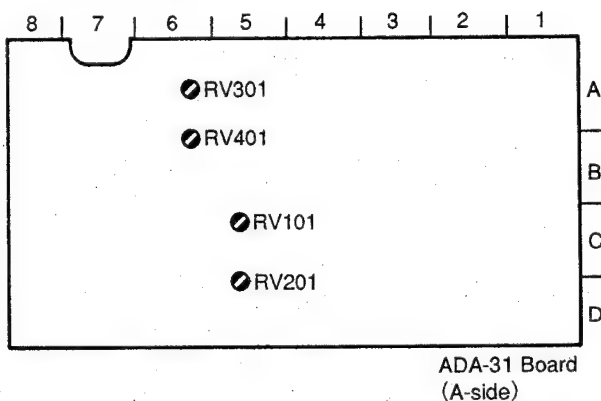
Equipment Used

Audio analyzer (AF oscillator)

Connection



Adjustment Location



Preparation Before Adjustments

1. Press function key **[F7]** (METER key) to show the meter value.
2. Check that the GAIN display shows "0.0 dB" for both CH1 and CH2.
If not, press functions keys **[F6]** (BAL RES) and **[F7]** (LVL RES) and set the display to 0.0 dB.

Adjustment

Step	Adjustment Condition	Specification	Adjustment Location (ADA-31 Board)
1	• Input the 1 kHz, 4 dBs signal to the ANALOG IN CH1 connector.	METER display CH1 value; -20.0 dB	RV101 (C, 5)
2	• Input the 1 kHz, 4 dBs signal to the ANALOG IN CH2 connector.	METER display CH2 value; -20.0 dB	RV201 (D, 5)

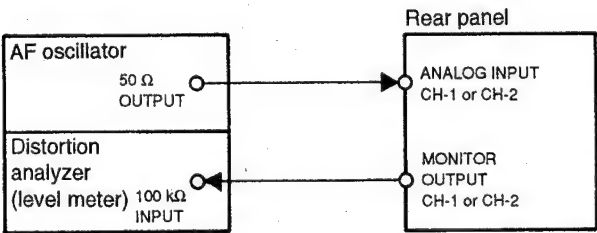
3-1-2. D/A Conversion Level Adjustment

Carry out the electrical adjustment of the D/A block of the ADA-31 board.
Carry this out after the "3-1-1. A/D Conversion Level Adjustment".

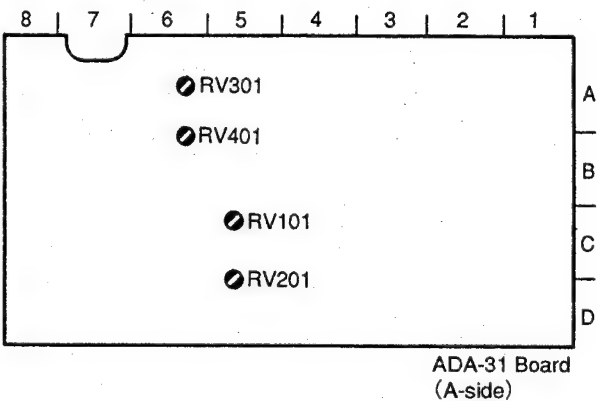
Equipment Used

Audio analyzer (AF oscillator)
Distortion analyzer (level meter)

Connection



Adjustment Location



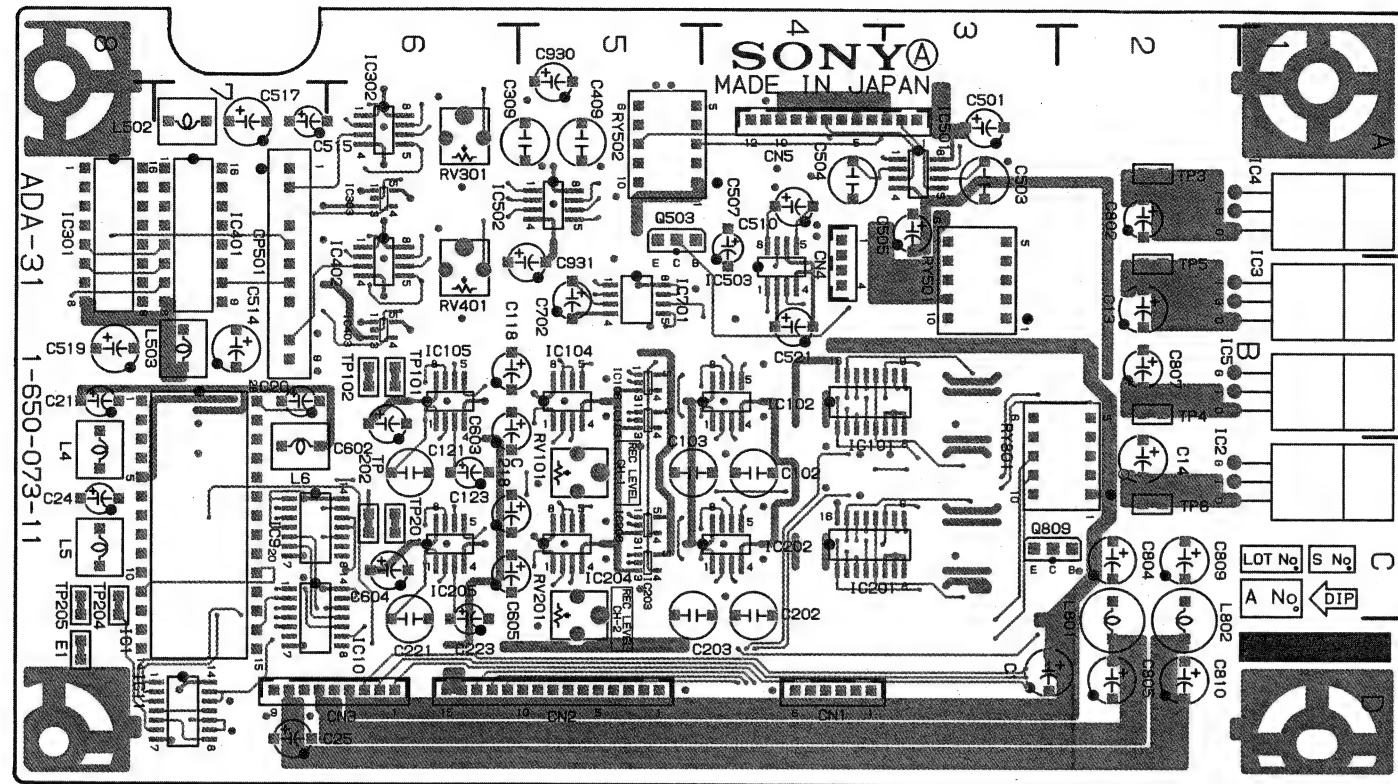
Adjustment

Step	Adjustment Condition	Specification	Adjustment Location (ADA-31 Board)
1	• Input the 1 kHz, 4 dBs signal to the ANALOG IN CH1 connector.	MONITOR OUTPUT CH1 Output level; -10 dBs ± 0.5 dB	RV301 (A, 6)
2	• Input the 1 kHz, 4 dBs signal to the ANALOG IN CH2 connector.	MONITOR OUTPUT CH2 Output level; -10 dBs ± 0.5 dB	RV401 (B, 6)

SECTION 4 BOARD LAYOUTS

Board	Function	Page
A ADA-31	Rec Audio,A/D Converter:PB Audio,D/A Converter	4-2
C CP-233	Connector(ANALOG IN,DIGITAL IN).....	4-7
CP-234	Connector(MONITOR OUT).....	4-7
H HP-57	Headphones	4-8
K KY-247	Eject Key	4-8
L LED-160	Power Indicator	4-8
R RF-53	RF Amplifier	4-2
S SSP-8	System Control,Signal Processor	4-4
SV-147	Servo	4-6
V VR-154	Rotary Encoder(BALANCE).....	4-8
VR-181	Rotary Encoder(LEVEL).....	4-8
OTHERS		
CAPSTAN FLEXIBLE		4-6
GOMA		4-6
RECOGN END FLEXIBLE		4-6
REEL FG		4-6
REEL FG.DEW FLEXIBLE		4-6
TENREGI		4-6
TENREGI MOTOR ENCODER FLEXIBLE		4-6

ADA-31 BOARD
A Side



1-650-073-11 A SIDE

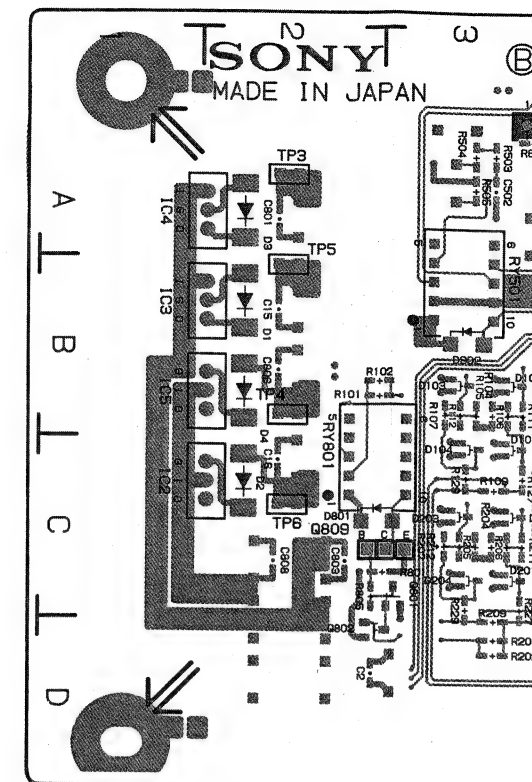
A Side is the same as Component Side.

ADA-31 BOARD
1-650-073-11

CN1	D-4	IC302	A-6
CN2	D-5	IC303	A-6
CN3	D-6	IC401	A-7
CN4	A-4	IC402	A-6
CN5	A-4	IC403	B-6
		IC501	A-3
D1	*B-2	IC502	A-6
D2	*C-2	IC503	B-4
D3	*A-2	IC701	B-5
D4	B-2		
D6	B-7	L4	C-8
D7	B-7	L5	C-8
D8	D-8	L6	C-8
D9	D-7	L502	A-8
D10	*C-7	L503	B-8
D11	*C-7	L801	D-2
D12	*C-7	L802	D-2
D101	*C-3		
D102	B-3	Q4	*D-7
D103	B-3	Q501	*B-5
D104	*C-3	Q502	B-5
D105	B-4	Q503	A-5
D106	B-4	Q504	*A-4
D201	*C-3	Q505	*A-4
D202	*C-3	Q801	*C-3
D203	*C-3	Q82	*D-3
D204	*C-3	Q803	*C-4
D206	*C-4	Q804	*C-4
D207	*C-4	Q805	*B-6
D501	*A-4	Q806	B-6
D502	*A-4	Q807	*B-4
D503	*A-4	Q808	*C-4
D504	*A-4	Q809	C-3
D801	*C-2		
D901	*A-5	RV101	C-5
D902	B-3	RV201	C-5
		RV301	A-6
		RV401	B-6
E1	D-8		
IC1	D-8	RY501	B-3
IC2	B-1	RY502	A-5
IC3	B-1	RY801	C-3
IC4	A-1		
IC5	B-2	TP3	A-2
IC9	C-7	TP4	B-2
IC10	D-6	TP5	B-2
IC11	D-8	TP6	C-2
IC101	C-4	TP101	B-6
IC102	B-4	TP102	B-6
IC103	B-5	TP201	C-6
IC104	B-5	TP202	C-6
IC105	B-6	TP204	C-8
IC106	B-5	TP205	C-8
IC201	C-4		
IC202	C-4		
IC203	C-5		
IC204	C-5		
IC205	C-6		
IC206	C-5		
IC301	A-8		

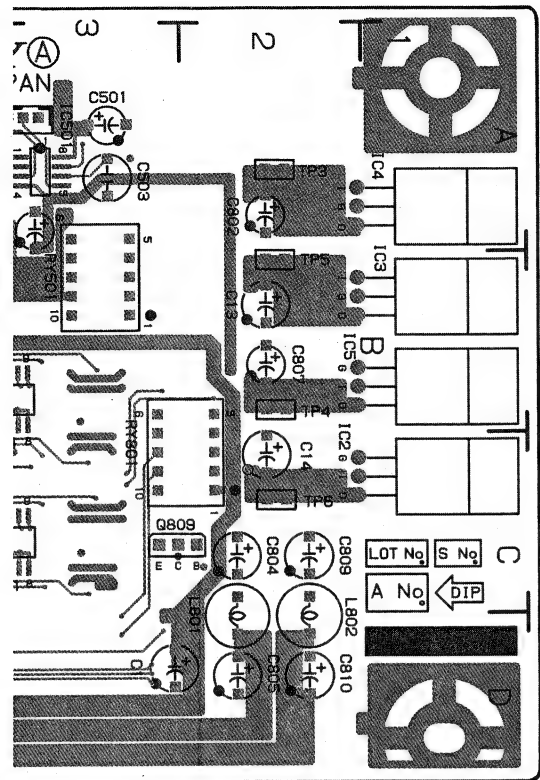
* ;B(Soldering)Side mount

ADA-31 BOARD
B Side



1-650-073-11 B SIDE

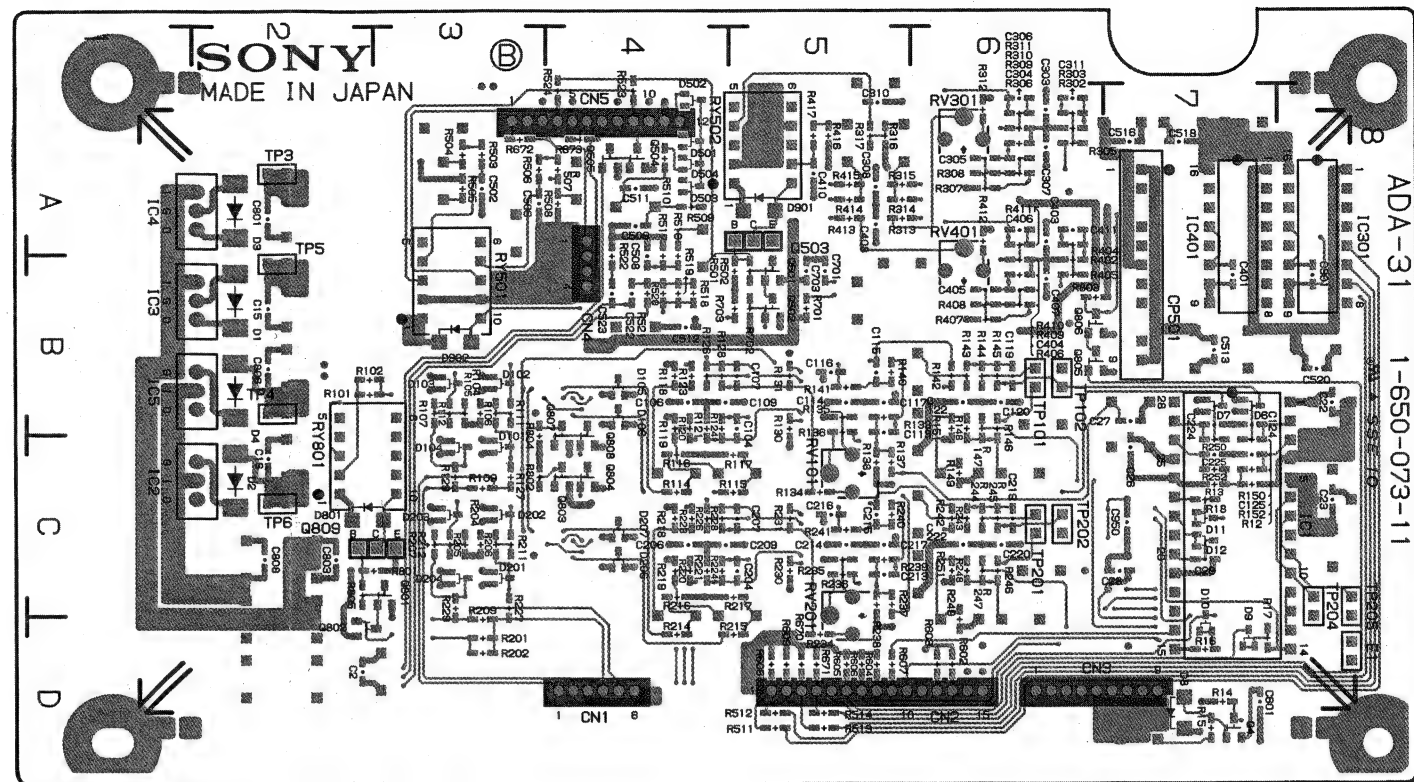
B Side is the same as Solder Side.



ADA-31 BOARD					
1-650-073-11					
CN1	D-4	IC302	A-6		
CN2	D-5	IC303	A-6		
CN3	D-6	IC401	A-7		
CN4	A-4	IC402	A-6		
CN5	A-4	IC403	B-6		
		IC501	A-3		
		IC502	A-6		
		IC503	B-4		
		IC701	B-5		
D1	*B-2				
D2	*C-2				
D3	*A-2				
D4	*B-2				
D6	*B-7	L4	C-8		
D7	*B-7	L5	C-8		
D8	*D-7	L6	C-8		
D9	*D-7	L502	A-8		
D10	*C-7	L503	B-8		
D11	*C-7	L801	D-2		
D12	*C-7	L802	D-2		
D101	*C-3				
D102	*B-3	Q4	*D-7		
D103	*B-3	Q501	*B-5		
D104	*C-3	Q502	*B-5		
D105	*B-4	Q503	A-5		
D106	*B-4	Q504	A-4		
D201	*C-3	Q505	A-4		
D202	*C-3	Q801	C-3		
D203	*C-3	Q802	D-3		
D204	*C-3	Q803	C-4		
D206	*C-4	Q804	C-4		
D207	*C-4	Q805	B-6		
D501	*A-4	Q806	B-6		
D502	*A-4	Q807	B-4		
D503	*A-4	Q808	C-4		
D504	*A-4	Q809	C-3		
D801	*C-2				
D901	*A-5	RV101	C-5		
D902	*B-3	RV201	C-5		
		RV301	A-6		
E1	D-8	RV401	B-6		
IC1	D-8	RY501	B-3		
IC2	B-1	RY502	A-5		
IC3	B-1	RY801	C-3		
IC4	A-1				
IC5	B-2	TP3	A-2		
IC9	C-7	TP4	B-2		
IC10	D-6	TP5	B-2		
IC11	D-8	TP6	C-2		
IC101	C-4	TP101	B-6		
IC102	B-4	TP102	B-6		
IC103	B-5	TP201	C-6		
IC104	B-5	TP202	C-6		
IC105	B-6	TP204	C-8		
IC106	B-5	TP205	C-8		
IC201	C-4				
IC202	C-4				
IC203	C-5				
IC204	C-5				
IC205	C-6				
IC206	C-5				
IC301	A-8				

*:B(Soldering)Side mount

ADA-31 BOARD
B Side

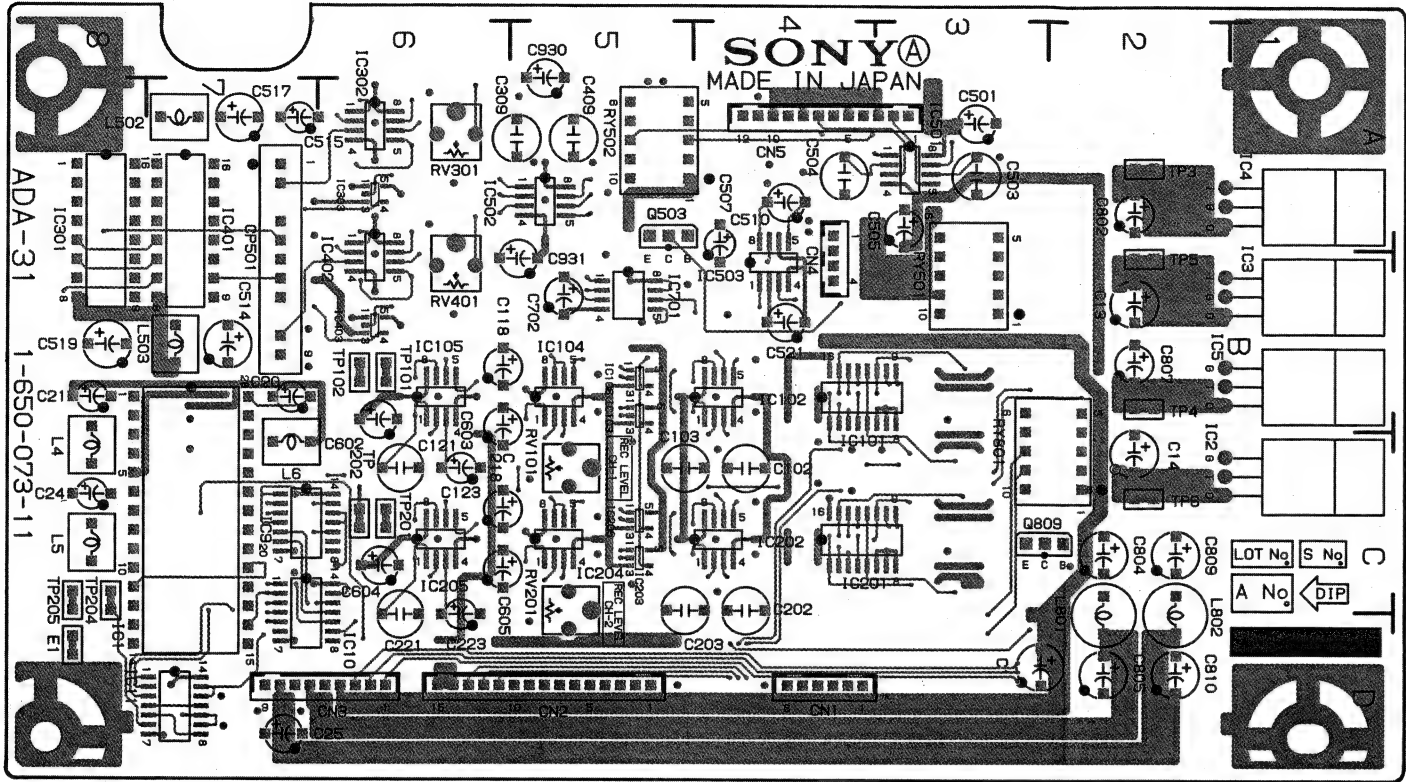


1-650-073-11 B SIDE

B Side is the same as Solder Side.

ADA-31 BOARD
A Side

Serial No. J ;10001 to 10110
UC;20001 to 20055
EK;50001 to 50235

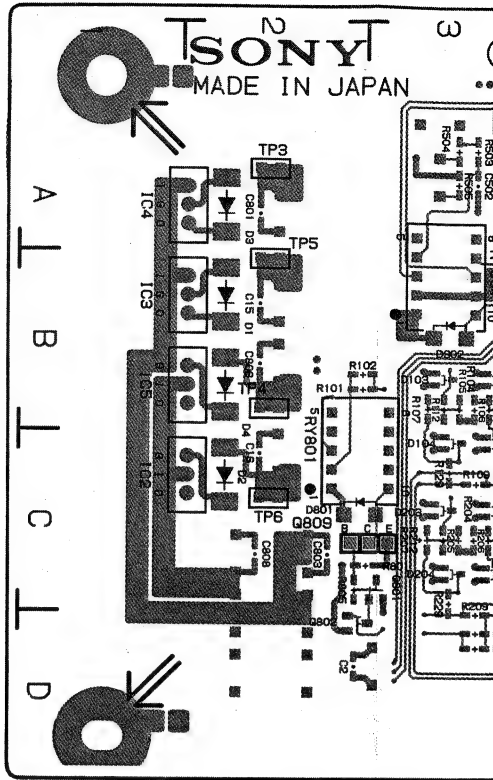


1-650-073-11 A SIDE

A Side is the same as Component Side.

ADA-31 BOARD
B Side

Serial No. J
U
E



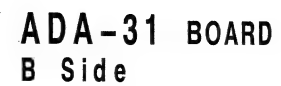
1-650-073-11 B SIDE

B Side is the same as Solder Side.

ADA-31 BOARD
1-650-073-11

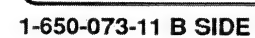
CN1	D-4	IC302	A-6
CN2	D-5	IC303	A-6
CN3	D-6	IC401	A-7
CN4	A-4	IC402	A-6
CN5	A-4	IC403	B-6
		IC501	A-3
		IC502	A-6
		IC503	B-4
		IC701	B-5
D1	B-2		
D2	C-2		
D3	A-2		
D4	B-2		
D6	B-7	L4	C-8
D7	B-7	L5	C-8
D8	D-7	L6	C-8
D9	D-7	L502	A-8
D10	C-7	L503	B-8
D11	C-7	L801	D-2
D12	C-7	L802	D-2
D101	C-3		
D102	B-3	Q4	D-7
D103	B-3	Q501	B-5
D104	C-3	Q502	B-5
D105	B-4	Q503	A-5
D106	B-4	Q504	A-4
D201	C-3	Q505	A-4
D202	C-3	Q801	C-3
D203	C-3	Q802	D-3
D204	C-3	Q803	C-4
D206	C-4	Q804	C-4
D207	C-4	Q805	B-6
D501	A-4	Q806	B-6
D502	A-4	Q807	B-4
D503	A-4	Q808	C-4
D504	A-4	Q809	C-3
D801	C-2		
D901	A-5	RV101	C-5
D902	B-3	RV201	C-5
		RV301	A-6
		RV401	B-6
E1	D-8		
IC1	D-8	RY501	B-3
IC2	B-1	RY502	A-5
IC3	B-1	RY801	C-3
IC4	A-1		
IC5	B-2	TP3	A-2
IC9	C-7	TP4	B-2
IC10	D-6	TP5	B-2
IC11	D-8	TP6	C-2
IC101	C-4	TP101	B-6
IC102	B-4	TP102	B-6
IC103	B-5	TP201	C-6
IC104	B-5	TP202	C-6
IC105	B-6	TP204	C-8
IC106	B-5	TP205	C-8
IC201	C-4		
IC202	C-4		
IC203	C-5		
IC204	C-5		
IC205	C-6		
IC206	C-5		
IC301	A-8		

*:B(Soldering)Side mount



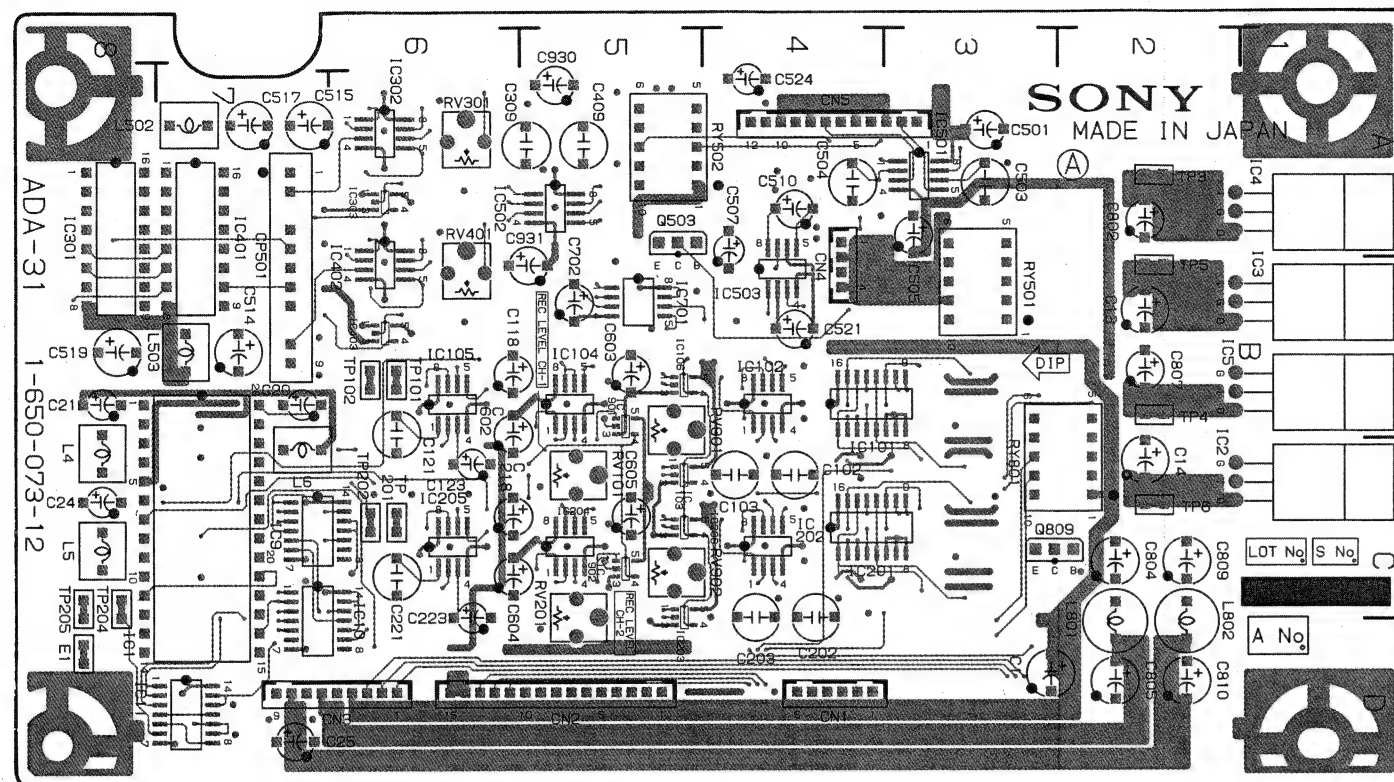
ADA-31 BOARD
1-650-073-11

* ;B(Soldering)Side mount



4 - 3 (a)

Serial No.	J ; 10111 and higher
	UC ; 20056 and higher
	EK ; 50236 and higher



1-650-073-12 A SIDE

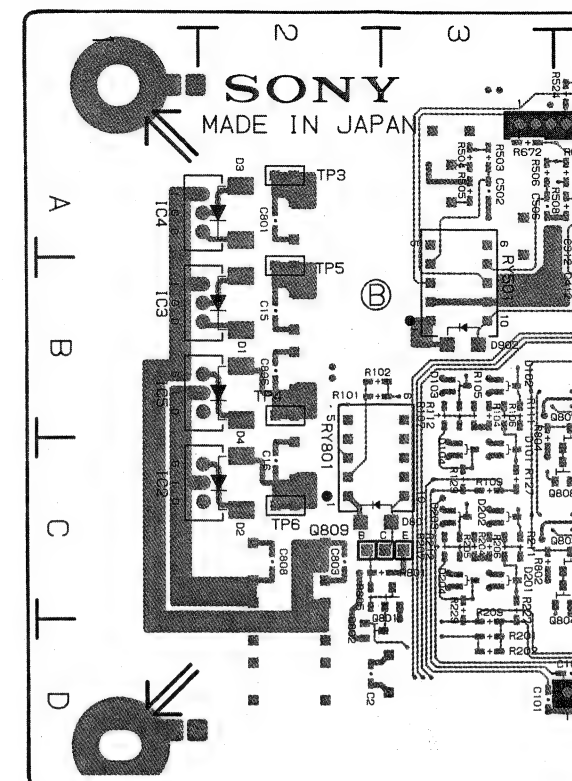
A Side Is the same as Component Side.

ADA-31 BOARD
1-650-073-12

CN1	D-4	IC302	A-6
CN2	D-5	IC303	A-6
CN4	D-6	IC401	A-6
CN4	B-4	IC402	A-6
CN5	A-4	IC403	B-6
CP501	A-7	IC501	A-3
		IC502	A-6
		IC503	B-4
D1	B*-2	IC701	B-5
D2	C*-2	IC901	B-5
D3	A*-2	IC902	C-5
D4	B*-2		
D6	B*-7	L4	C-8
D7	B*-7	L5	C-8
D8	D*-7	L6	C-8
D9	D*-7	L502	A-7
D10	C*-7	L503	B*-8
D11	C*-7	L801	D-2
D12	C*-7	L802	D-2
D101	C*-3		
D102	B*-3	Q4	D*-7
D103	B*-3	Q501	B*-5
D104	C*-3	Q502	B*-5
D105	B*-4	Q503	A-5
D106	C*-4	Q504	A*-4
D201	C*-3	Q505	A*-4
D202	C*-3	Q801	C*-3
D203	C*-3	Q802	D*-2
D204	C*-3	Q803	C*-4
D206	C*-4	Q804	C*-4
D207	C*-4	Q805	A*-6
D501	A*-4	Q806	B*-6
D502	A*-4	Q807	B*-4
D503	A*-4	Q808	C*-4
D504	A*-4	Q809	C-3
D801	C*-3	Q901	C*-6
D901	A*-5	Q902	C*-6
D902	B*-3		
E1	D-8	RV101	C-5
		RV201	C-5
		RV301	A-6
IC1	D-8	RV401	A-6
IC2	C-2	RV901	B-4
IC3	B-1	RV902	C-4
IC4	A-1		
IC5	B-2	RY501	B-3
IC9	C-7	RY502	A-4
IC10	C-6	RY801	C-3
IC11	D-8		
IC101	C-4	TP3	A-2
IC102	B-4	TP4	B-2
IC103	C-5	TP5	B-2
IC104	B-5	TP6	C-2
IC105	B-6	TP101	B-6
IC106	B-6	TP102	B-6
IC201	C-4	TP201	C-6
IC202	C-4	TP202	C-6
IC203	D-5	TP204	C-8
IC204	C-5	TP205	C-8
IC205	C-6		
IC206	C-4		
IC301	A-8		

* ;B(Soldering)Side mount

Serial No. J ; 101
UC ; 200
EK ; 502



1-650-073-12 B SIDE

B Side Is the same as Solder Side.

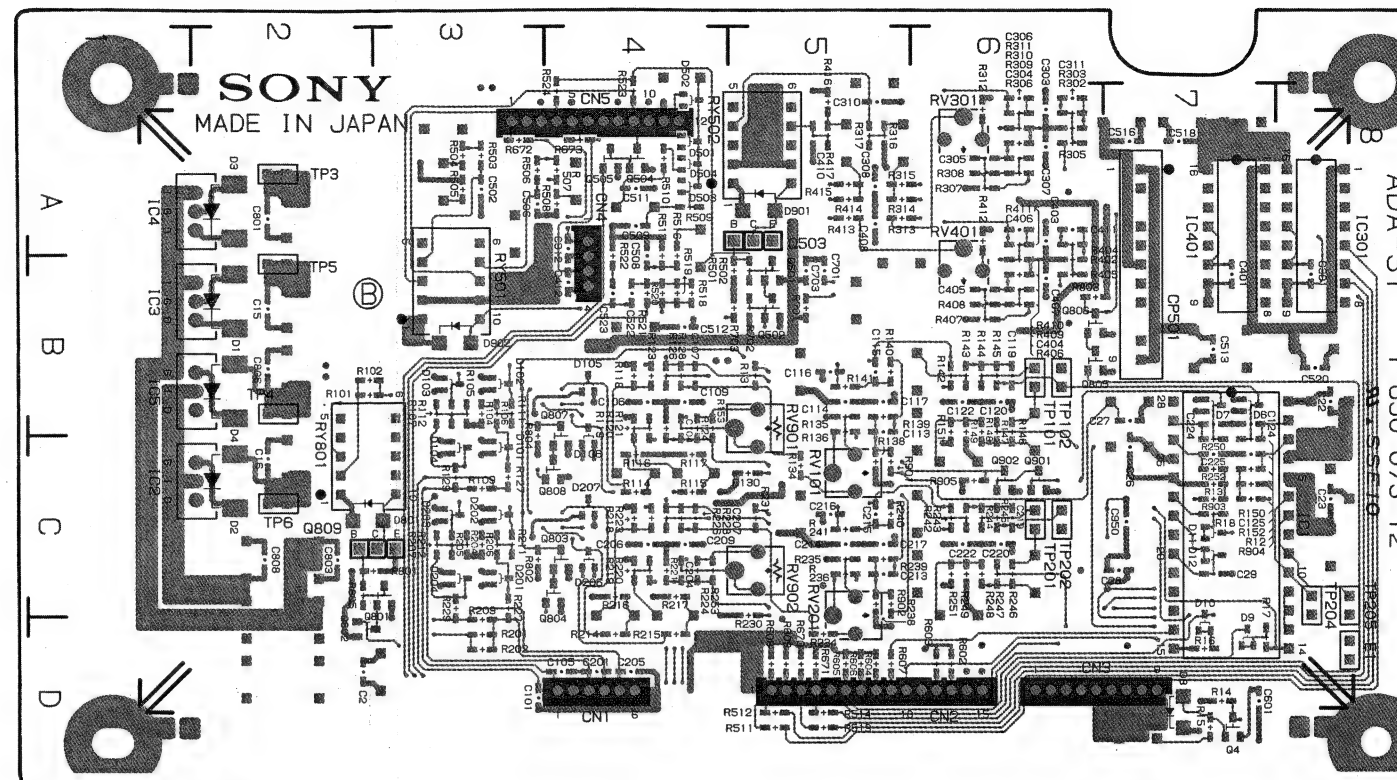
ADA-31 BOARD
B Side

Serial No. J ;10111 and higher
UC;20056 and higher
EK;50236 and higher

ADA-31 BOARD
1-650-073-12

CN1	D-4	IC302	A-6
CN2	D-5	IC303	A-6
CN3	D-6	IC401	A-7
CN4	B-4	IC402	A-6
CN5	A-4	IC403	B-6
		IC501	A-3
CP501	A-7	IC502	A-6
		IC503	B-4
D1	B-2	IC701	B-5
D2	C-2	IC901	B-5
D3	A-2	IC902	C-5
D4	B-2		
D6	B-7	L4	C-8
D7	B-7	L5	C-8
D8	D-7	L6	C-7
D9	D-7	L502	A-8
D10	C-7	L503	B-8
D11	C-7	L801	D-2
D12	C-7	L802	D-2
D101	C-3		
D102	B-3	Q4	D-7
D103	B-3	Q501	B-5
D104	C-3	Q502	B-5
D105	B-4	Q503	A-5
D106	C-4	Q504	A-4
D201	C-3	Q505	A-4
D202	C-3	Q801	C-3
D203	C-3	Q802	D-2
D204	C-3	Q803	C-4
D206	C-4	Q804	C-4
D207	C-4	Q805	B-6
D501	A-4	Q806	B-6
D502	A-4	Q807	B-4
D503	A-4	Q808	C-4
D504	A-4	Q809	C-3
D801	C-3	Q901	C-6
D901	A-5	Q902	C-6
D902	B-3		
E1	D-8	RV101	C-5
		RV201	C-5
IC1	D-8	RV301	A-6
IC2	C-2	RV401	A-6
IC3	B-1	RV901	B-4
IC4	A-1	RV902	C-4
IC5	B-2		
IC9	C-7	RY501	B-3
IC10	C-6	RY502	A-4
IC11	D-8	RY801	C-3
IC101	C-4	TP3	A-2
IC102	B-4	TP4	B-2
IC103	C-5	TP5	B-2
IC104	B-5	TP6	C-2
IC105	B-6	TP101	B-6
IC106	B-5	TP102	B-6
IC201	C-4	TP201	C-6
IC202	C-4	TP202	C-6
IC203	D-5	TP204	C-8
IC204	C-5	TP205	C-8
IC205	C-6		
IC206	C-4		
IC301	A-8		

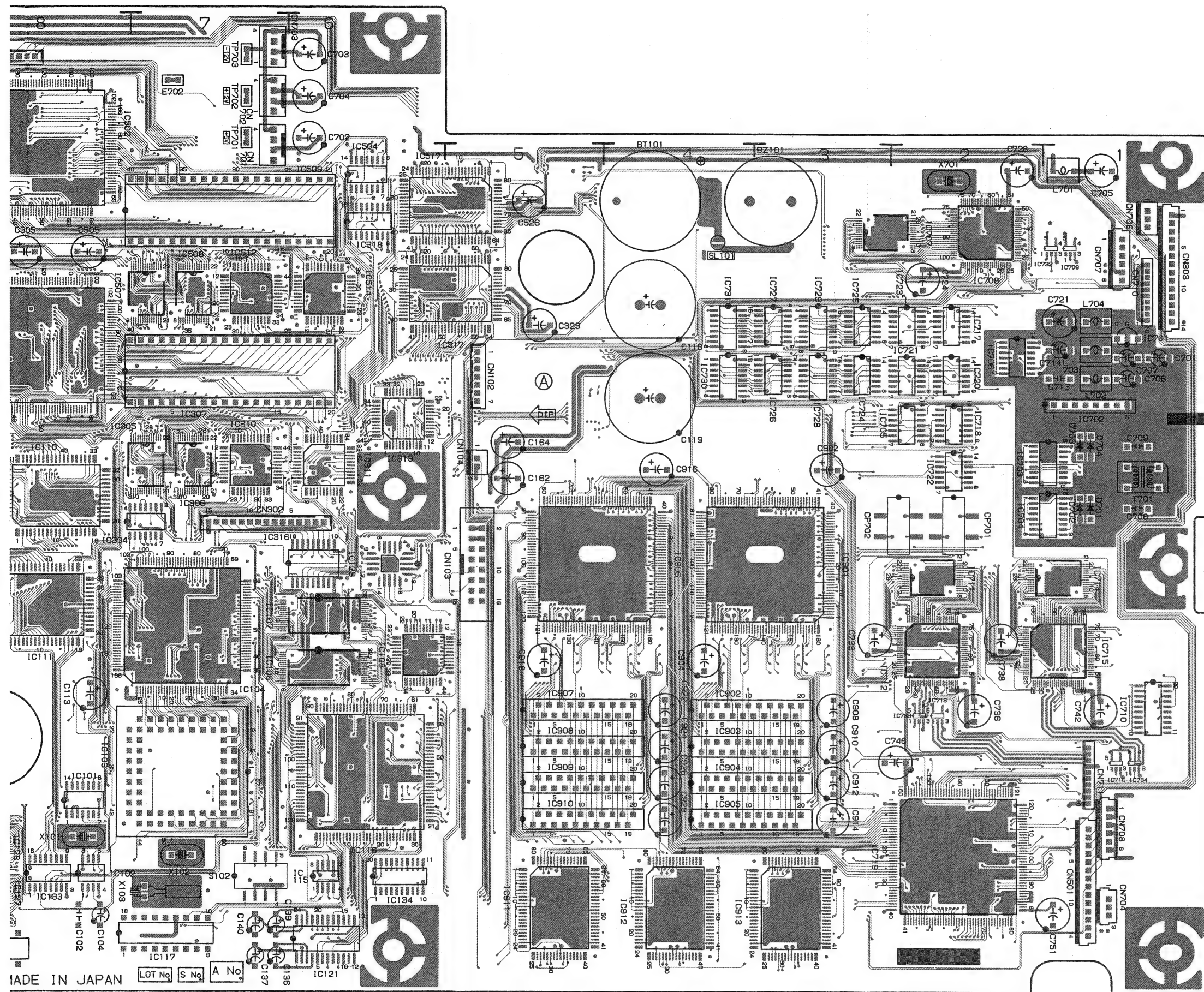
*:B(Soldering)Side mount



1-650-073-12 B SIDE

B Side is the same as Solder Side.

A Side is the same as Component Side.



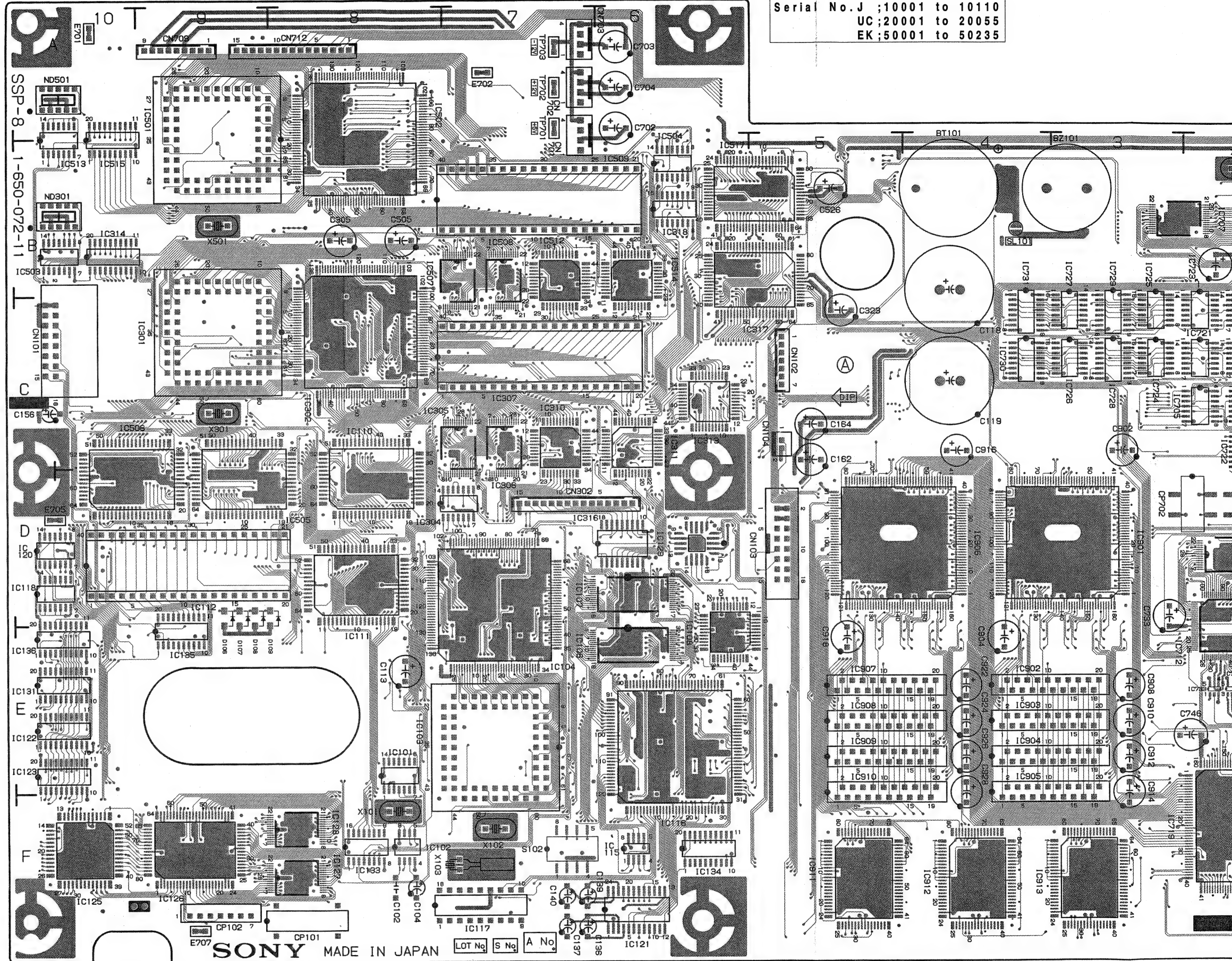
SSP-8 BOARD
1-650-072-11

CN101	C-10	IC120	D-10	IC712	E-3
CN102	C-5	IC121	F-6	IC713	E-2
CN103	D-5	IC122	E-10	IC714	D-1
CN104	C-5	IC123	E-10	IC715	E-1
CN302	D-7	IC124	E-10	IC716	E-1
CN303	B-1	IC125	F-10	IC717	C-2
CN501	F-1	IC126	F-9	IC718	C-2
CN701	B-7	IC127	F-8	IC719	F-3
CN702	A-7	IC128	F-8	IC720	C-2
CN703	A-6	IC129	D-6	IC721	C-2
CN704	F-1	IC131	E-10	IC722	C-2
CN706	B-1	IC132	D-6	IC723	B-2
CN707	B-1	IC133	F-8	IC724	C-3
CN708	F-1	IC134	F-6	IC725	B-3
CN709	A-9	IC135	E-9	IC726	C-3
CN710	B-1	IC136	E-10	IC727	B-3
CN711	E-1	IC301	C-9	IC728	C-3
CN712	A-8	IC302	C-8	IC729	B-3
		IC303	B-8	IC730	C-4
CP101	F-8	IC304	D-8	IC731	B-4
CP102	F-8	IC305	C-8	IC732	B-2
CP701	D-2	IC306	D-7	IC733	E-2
CP702	D-3	IC307	C-7	IC734	E-1
		IC308	E-6	IC901	D-3
D101	B-4	IC309	C-7	IC902	E-4
D102	B-4	IC310	C-7	IC903	E-4
D103	B-4	IC311	C-6	IC904	E-4
D104	B-3	IC312	D-10	IC905	E-4
D105	B-3	IC313	C-6	IC906	D-4
D106	E-9	IC314	B-10	IC907	E-5
D107	E-9	IC316	D-7	IC908	E-5
D108	E-9	IC317	C-5	IC909	E-5
D109	E-8	IC318	B-6	IC910	E-5
D701	D-1	IC319	B-8	IC911	F-5
D702	D-1	IC501	A-9	IC912	F-4
D703	C-1	IC502	A-8	IC913	F-4
D704	C-1	IC503	B-10		
		IC504	A-6	L701	B-1
E701	A-10	IC505	D-8	L702	B-1
E702	A-7	IC506	C-10	L703	C-1
E705	D-10	IC507	B-8	L704	C-1
E707	F-9	IC508	B-7		
		IC509	B-6	ND301	B-10
		IC510	B-6	ND501	A-10
		IC511	B-7		
		IC512	B-7	S102	F-7
		IC513	B-10		
		IC514	B-6	TP701	A-7
		IC515	B-10	TP702	A-7
		IC517	B-6	TP703	A-7
		IC701	C-1		
		IC702	C-1	T701	D-1
		IC703	C-2		
		IC704	D-2	X101	F-8
		IC705	C-3	X102	F-7
		IC706	C-2	X103	F-8
		IC707	B-2	X301	C-9
		IC708	B-2	X501	B-9
		IC709	B-1	X701	B-2
		IC710	E-1		
		IC711	D-2		

*:B(Soldering)Side mount

SSP-8 BOARD
A Side

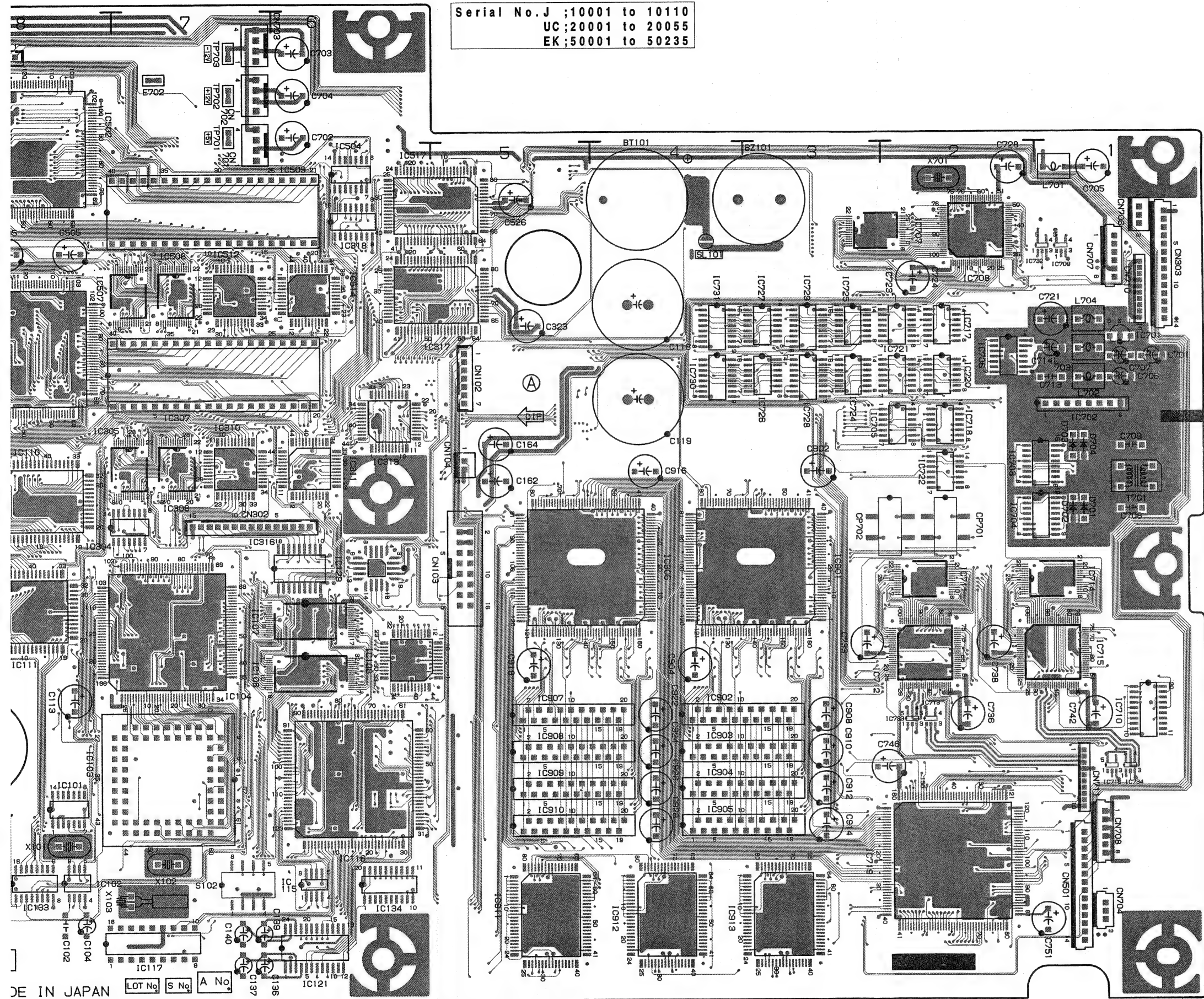
Serial No. J ;10001 to 10110
UC ;20001 to 20055
EK ;50001 to 50235



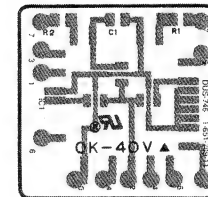
1-650-072-11 A SIDE

A Side is the same as Component Side.

Serial No.	J	;10001 to 10110
	UC	;20001 to 20055
	EK	;50001 to 50235

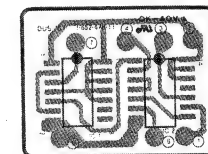


DUS-746 BOARD



1-651-709-11 A SIDE

DUS-757 BOARD



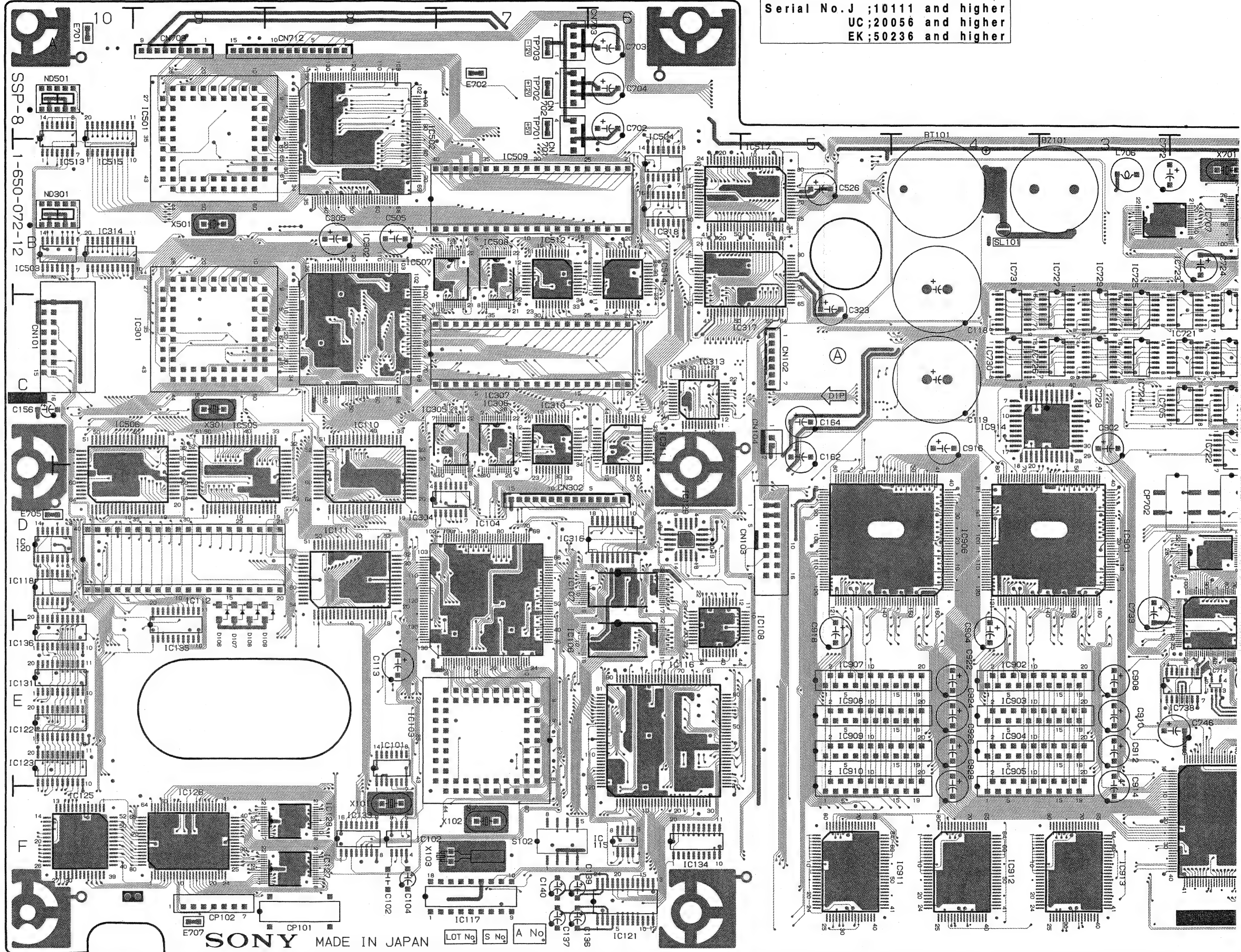
1-652-478-11 A SIDE

SSP-8 BOARD
1-650-072-12

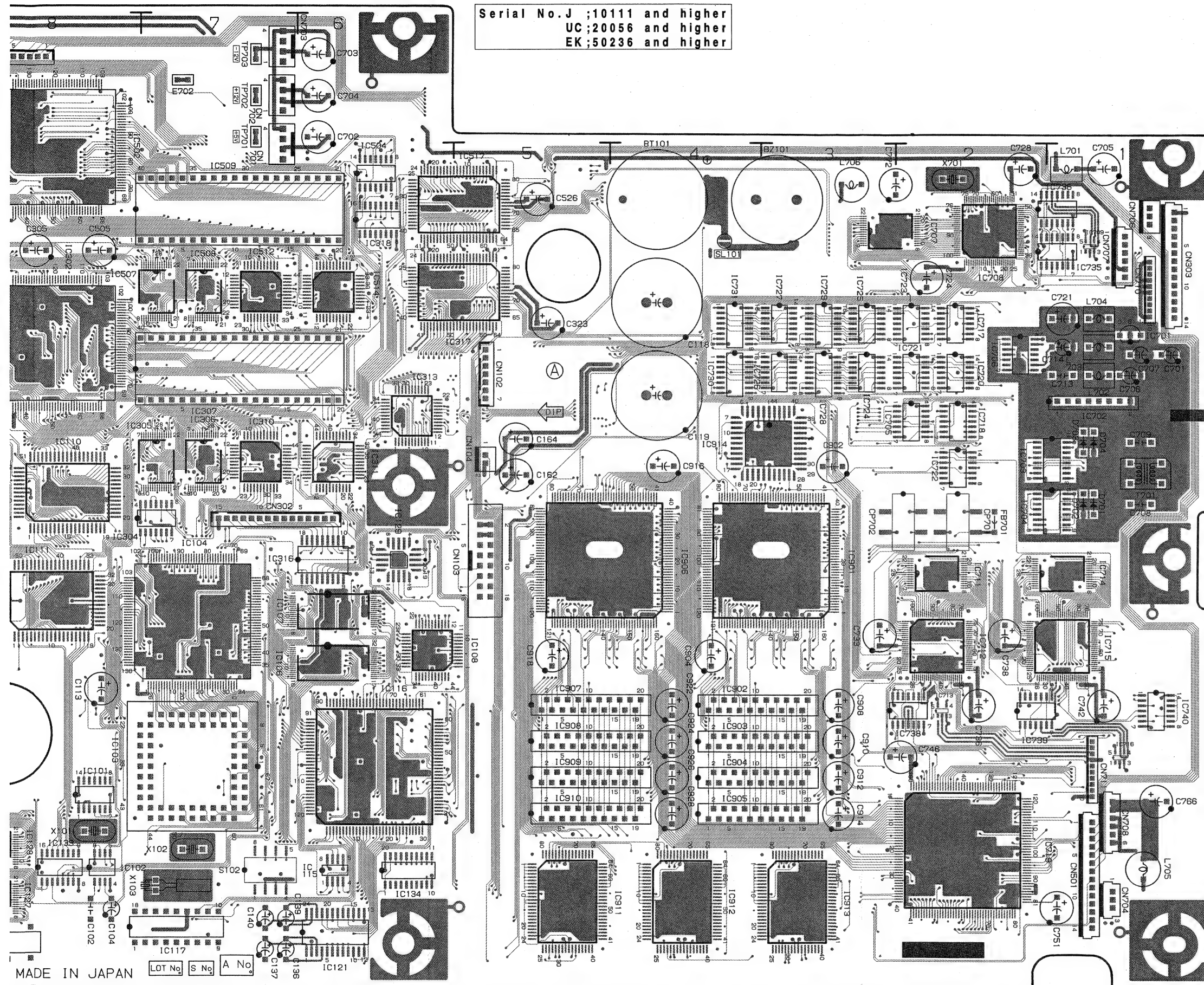
CN101	C-10	IC121	F-6	IC716	E-1
CN102	C-5	IC122	E-10	IC717	C-2
CN103	D-5	IC123	E-10	IC718	C-2
CN104	C-5	IC124	E-10	IC719	F-2
CN302	D-7	IC125	F-10	IC720	C-2
CN303	B-1	IC126	F-9	IC721	C-2
CN501	F-1	IC127	F-8	IC722	C-2
CN701	B-7	IC128	F-8	IC723	B-2
CN702	A-7	IC129	D-6	IC724	C-3
CN703	A-6	IC131	E-10	IC725	B-3
CN704	F-1	IC132	D-6	IC726	C-4
CN706	B-1	IC133	F-8	IC727	B-3
CN707	B-1	IC134	F-6	IC728	C-3
CN708	F-1	IC135	E-9	IC729	B-3
CN709	A-9	IC136	E-10	IC730	C-4
CN710	B-1	IC301	C-9	IC731	B-4
CN711	E-1	IC302	B-8	IC735	B-1
CN712	A-8	IC303	B-8	IC736	B-1
		IC304	D-8	IC737	E-3
CP101	F-8	IC305	C-9	IC738	E-2
CP102	F-9	IC306	C-7	IC739	E-2
CP701	D-2	IC307	C-7	IC740	E-1
CP702	D-3	IC308	E-6	IC901	D-3
		IC309	C-7	IC902	E-4
D101	B-4	IC310	C-7	IC903	E-4
D102	B-4	IC311	C-6	IC904	E-4
D103	B-4	IC312	D-10	IC905	E-4
D104	B-3	IC313	C-6	IC906	D-4
D105	B-3	IC314	B-10	IC907	E-6
D106	E-9	IC316	D-7	IC908	E-6
D107	E-9	IC317	C-5	IC909	E-6
D108	E-9	IC318	B-6	IC910	E-6
D109	E-6	IC319	B-9	IC911	F-4
D701	D-1	IC501	A-9	IC912	F-4
D702	D-1	IC502	A-8	IC913	F-3
D703	C-1	IC503	B-10	IC914	C-4
D704	C-1	IC504	B-6		
D705	D-3	IC505	C-9	L701	B-1
		IC506	C-10	L702	C-1
E701	A-10	IC507	B-8	L703	C-1
E702	A-7	IC508	B-7	L704	B-1
E705	D-10	IC509	B-7	L705	F-1
E707	F-9	IC510	B-6	L706	B-3
		IC511	B-7		
IC101	E-8	IC512	B-7	ND301	B-10
IC102	F-8	IC513	B-10	ND501	A-10
IC103	E-8	IC514	B-6		
IC104	D-7	IC515	B-10	S102	F-7
IC105	D-7	IC517	B-5		
IC106	E-7	IC701	C-1	TP701	A-7
IC107	D-7	IC702	C-1	TP702	A-7
IC108	E-6	IC703	C-2	TP703	A-7
IC109	E-6	IC704	D-2		
IC110	C-8	IC705	C-3	T701	D-1
IC111	D-8	IC706	C-2		
IC112	D-9	IC707	B-2	X101	F-9
IC114	E-6	IC708	B-2	X102	F-7
IC115	F-6	IC709	B-1	X103	F-6
IC116	E-6	IC711	D-2	X301	C-9
IC117	F-7	IC712	E-2	X501	B-9
IC118	D-10	IC713	E-2	X701	B-2
IC119	D-8	IC714	D-1		
IC120	D-10	IC715	E-1		

*:B(Soldering)Side mount

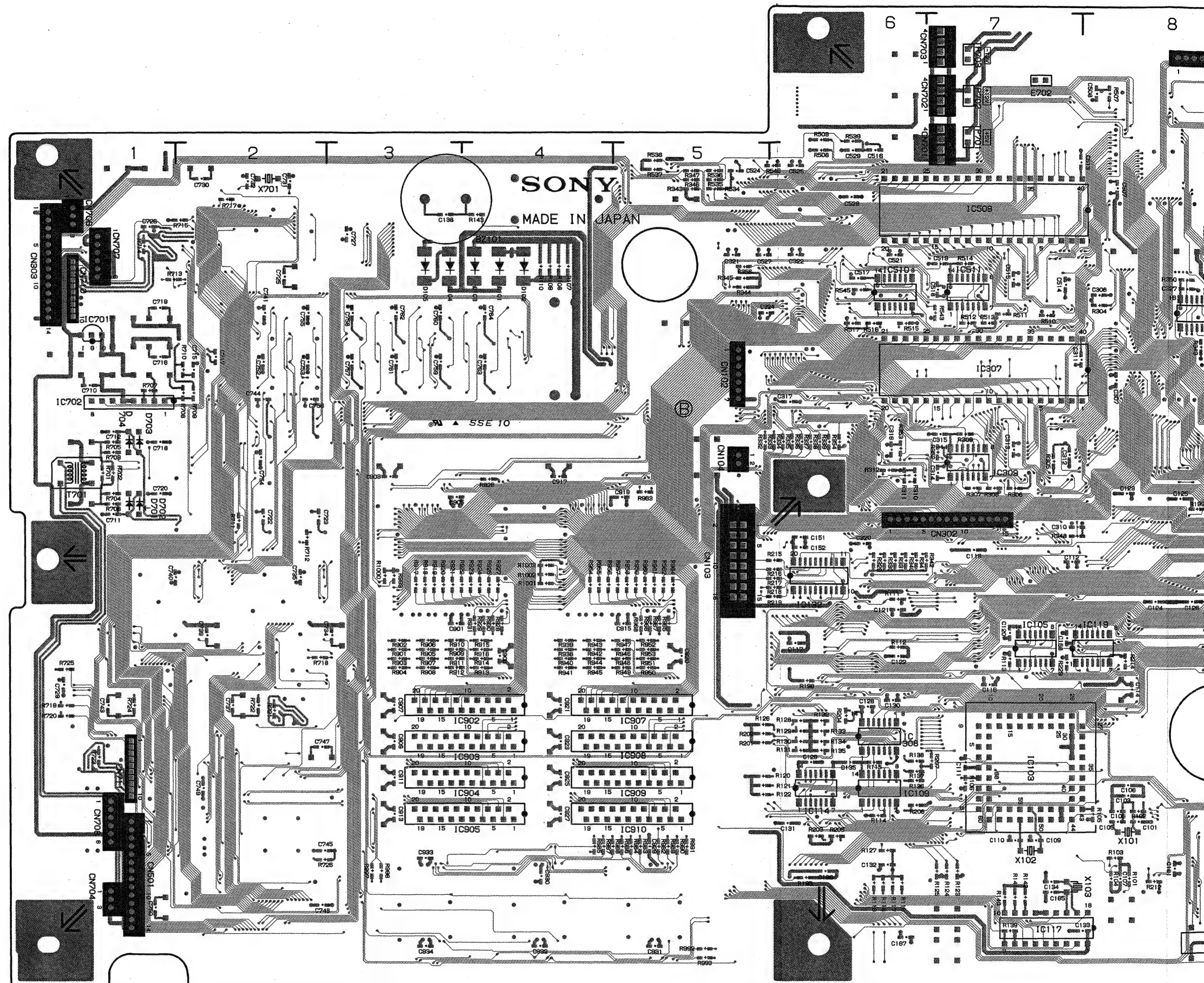
SSP-8 BOARD
A Side



<p>Serial No.J ;10111 and higher UC;20056 and higher EK;50236 and higher</p>

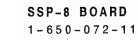


SSP-8 BOARD
B Side



1-650-072-11 B SIDE

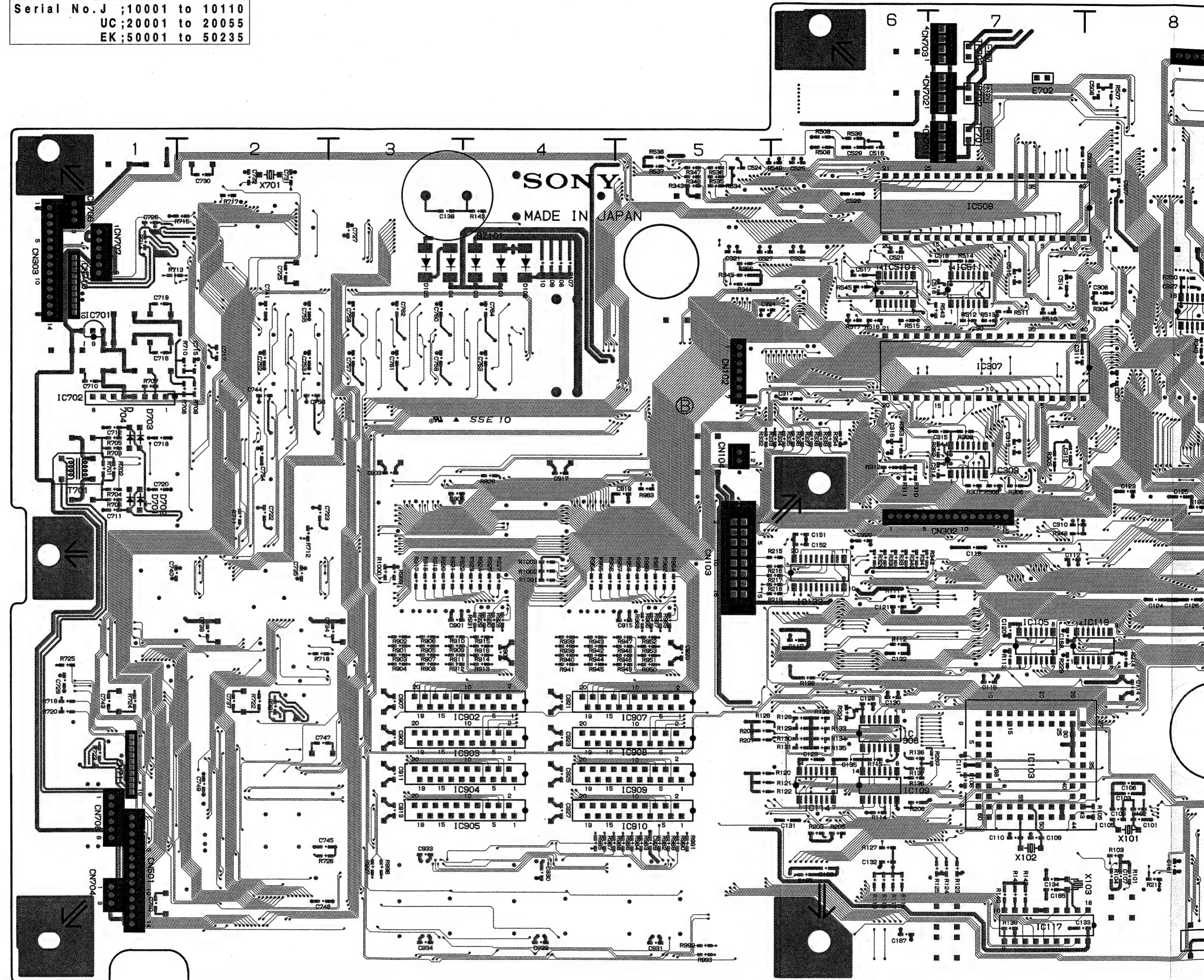
B Side is the same as Solder Side.



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* ;B(Soldering)Side mount
```


SSP-8 BOARD
B Side

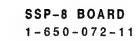
Serial No. J ; 10001 to 10110
UC ; 20001 to 20055
EK ; 50001 to 50235



1-650-072-11 B SIDE

B Side is the same as Solder Side.

4 - 5 (a)

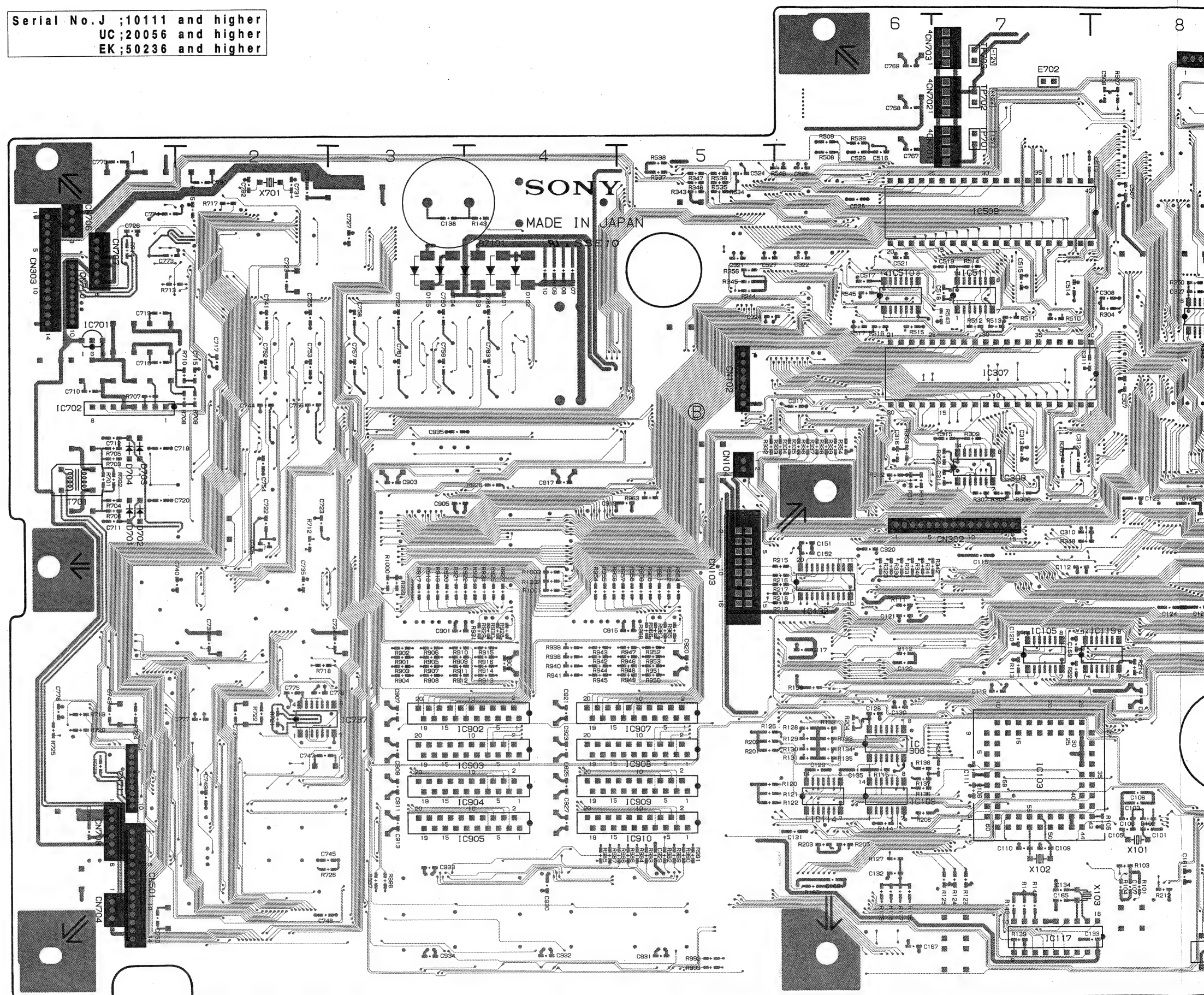


CN101	C-10	IC120	D-10	IC712	E-3
CN102	C-5	IC121	F-6	IC713	E-2
CN103	D-5	IC122	E-10	IC714	D-1
CN104	C-5	IC123	E-10	IC715	E-1
CN302	D-7	IC124	*E-10	IC716	E-1
CN303	B-1	IC125	F-10	IC717	C-2
CN501	F-1	IC126	F-9	IC718	C-2
CN701	B-7	IC127	F-8	IC719	F-3
CN702	A-7	IC128	F-8	IC720	C-2
CN703	A-6	IC129	D-6	IC721	C-2
CN704	F-1	IC131	E-10	IC722	C-2
CN706	B-1	IC132	*D-6	IC723	B-2
CN707	B-1	IC133	F-8	IC724	C-3
CN708	F-1	IC134	F-6	IC725	B-3
CN709	A-9	IC135	E-9	IC726	C-3
CN710	B-1	IC136	E-10	IC727	B-3
CN711	E-1	IC301	C-9	IC728	C-3
CN712	A-8	IC302	C-8	IC729	B-3
		IC303	*B-8	IC730	C-4
CP101	F-8	IC304	D-8	IC731	B-4
CP102	F-9	IC305	C-8	IC732	B-2
CP701	D-2	IC306	D-7	IC733	E-2
CP702	D-3	IC307	C-7	IC734	E-1
		IC308	*E-6	IC901	D-3
D101	*B-4	IC309	*C-7	IC902	E-4
D102	*B-4	IC310	C-7	IC903	E-4
D103	*B-4	IC311	C-6	IC904	E-4
D104	*B-3	IC312	*D-10	IC905	E-4
D105	*B-3	IC313	C-6	IC906	D-4
D106	E-9	IC314	B-10	IC907	E-5
D107	E-9	IC316	D-7	IC908	E-5
D108	E-9	IC317	C-5	IC909	E-5
D109	E-8	IC318	B-6	IC910	E-5
D101	D-1	IC319	*B-9	IC911	F-5
D702	D-1	IC501	A-9	IC912	F-4
D703	C-1	IC502	A-8	IC913	F-4
D704	C-1	IC503	B-10		
		IC504	A-6	L701	B-1
E701	A-10	IC505	D-8	L702	B-1
E702	A-7	IC506	C-10	L703	C-1
E705	D-10	IC507	B-8	L704	C-1
E707	F-9	IC508	B-7		
		IC509	B-6	ND301	B-10
IC101	E-8	IC510	*B-6	ND501	A-10
IC102	F-8	IC511	*B-7		
IC103	E-8	IC512	B-7	S102	F-7
IC104	E-7	IC513	B-10		
IC105	D-7	IC514	B-6	TP701	A-7
IC106	E-7	IC515	B-10	TP702	A-7
IC107	D-7	IC517	B-6	TP703	A-7
IC108	E-6	IC701	C-1		
IC109	*E-6	IC702	C-1	T701	D-1
IC110	E-8	IC703	C-2		
IC111	C-8	IC704	D-2	X101	F-8
IC112	E-9	IC705	C-3	X702	F-7
IC114	E-8	IC706	C-2	X103	F-8
IC115	F-6	IC707	B-2	X301	C-9
IC116	F-6	IC708	B-2	X501	B-9
IC117	F-7	IC709	B-1	X701	B-2
IC118	D-10	IC710	E-1		
IC119	*D-8	IC711	D-2		

* ;B(Soldering)Side mount

SSP-8 BOARD
B Side

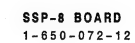
Serial No. J ;10111 and higher
UC;20056 and higher
EK;50236 and higher



1-650-072-12 B SIDE

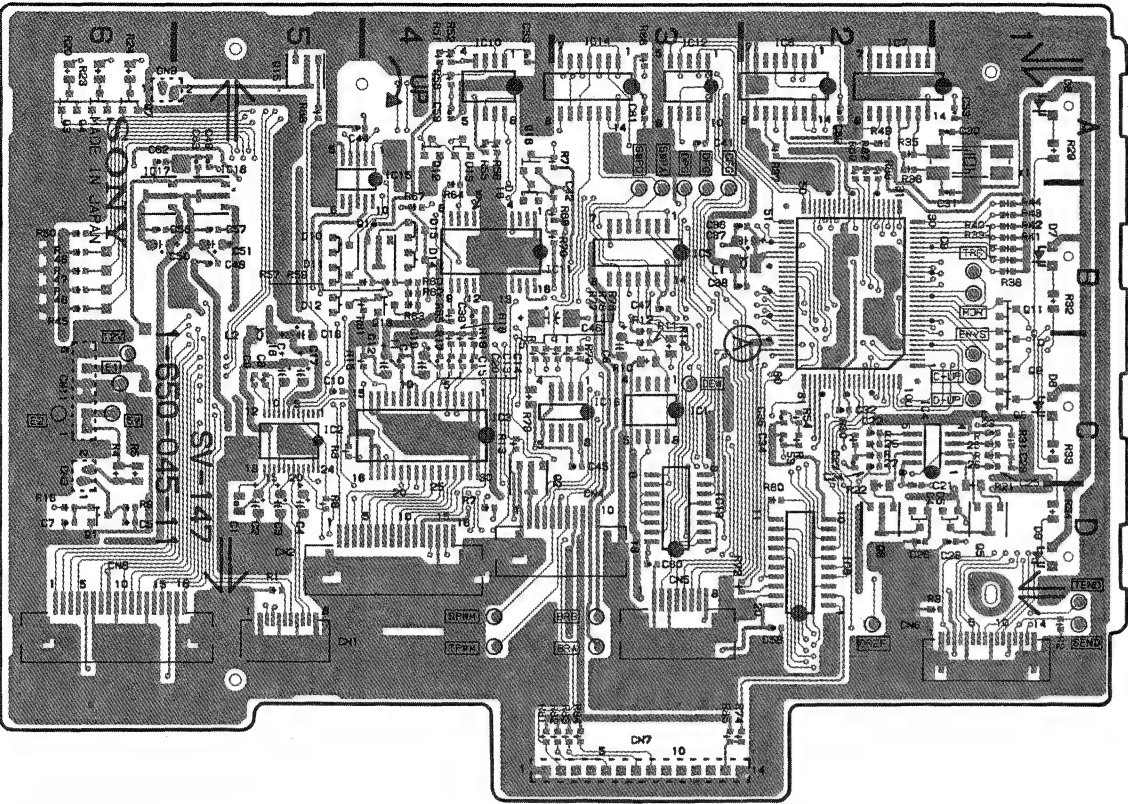
B Side is the same as Solder Side.

4 - 5 (b)



*;B(Soldering)Side mount

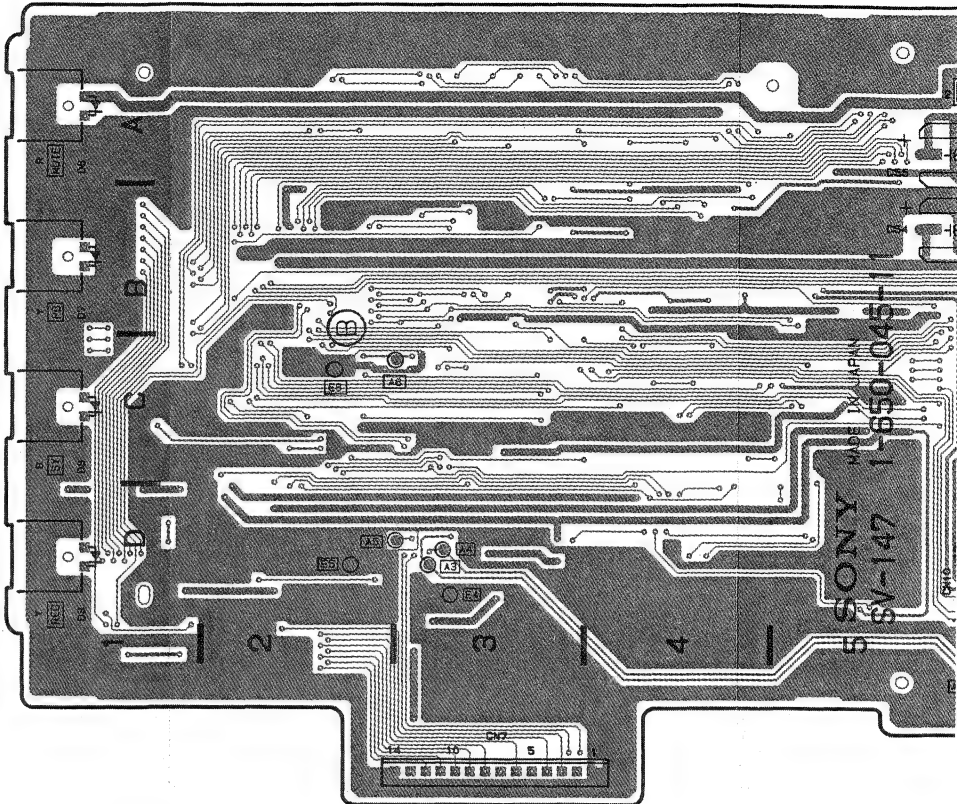
SV-147 BOARD
A Side



1-650-045-11 A SIDE

A Side is the same as Component Side.

SV-147 BOARD
B Side



1-650-045-11 B SIDE

B Side is the same as Solder Side.

DUS-736 BOARD



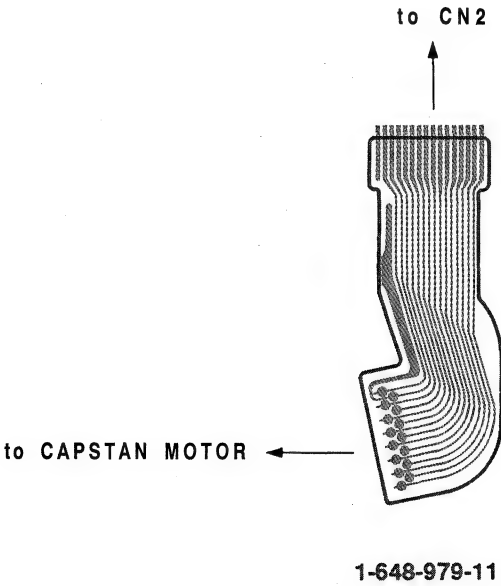
1-651-135-11 A SIDE

SV-147 BOARD
1-650-045-11

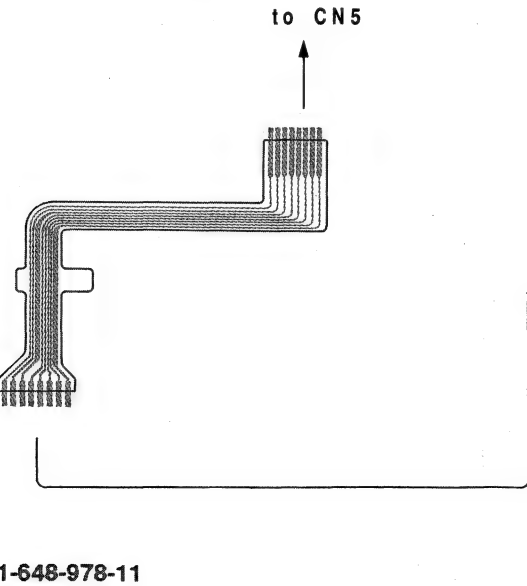
CN1	D-5	Q1	D-6
CN2	D-5	Q2	C-3
CN3	C-6	Q3	A-6
CN4	D-3	Q4	A-6
CN5	D-3	Q5	D-1
CN6	D-2	Q6	D-2
CN7	D-3	Q7	A-6
CN8	D-6	Q8	C-1
CN10	*D-6	Q9	C-1
CN11	C-6	Q10	C-1
		Q11	B-1
D1	*A-6	Q12	A-4
D2	*A-6	Q13	B-4
D3	*A-6	Q14	B-4
D4	D-2	Q15	A-5
D5	D-1	Q16	A-4
D6	A-1		
D7	B-1	S1	*B-6
D8	C-1		
D9	D-1	X1	A-1
D10	B-5		
D11	B-5		
D12	B-5		
D13	A-4		
D14	B-4		
D15	B-4		
D16	B-4		
IC1	C-3		
IC2	C-5		
IC3	C-4		
IC4	C-2		
IC5	B-3		
IC6	A-2		
IC7	A-2		
IC8	D-2		
IC9	B-1		
IC10	A-4		
IC11	B-3		
IC12	A-3		
IC13	D-3		
IC14	A-3		
IC15	A-4		
IC16	C-3		
IC17	A-6		
IC18	A-5		

*:B(Soldering)Side mount

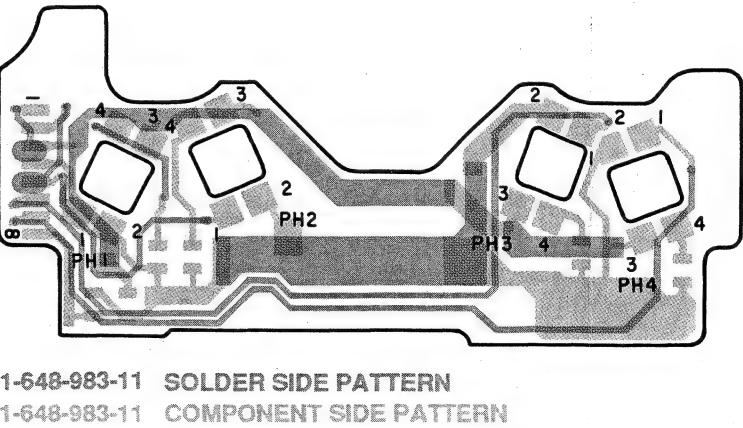
CAPSTAN FLEXIBLE BOARD



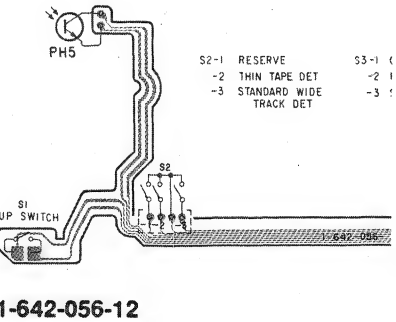
REEL FG.DEW FLEXIBLE BOARD



REEL FG BOARD



RECOGNI END FLEXIBLE BOARD

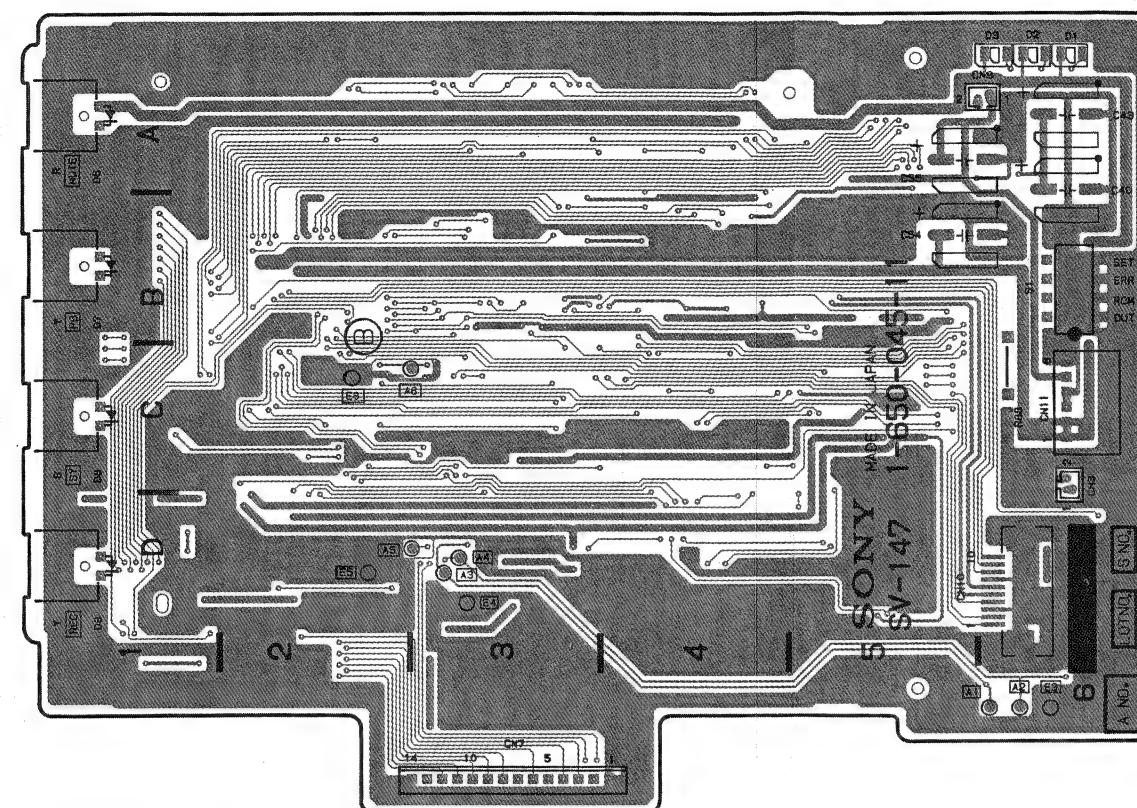


SV-147 BOARD
B Side

SV-147 BOARD
1-650-045-11

CN1	D-5	Q1	D-6
CN2	D-5	Q2	C-3
CN3	C-6	Q3	A-6
CN4	D-3	Q4	A-6
CN5	D-3	Q5	D-1
CN6	D-2	Q6	D-2
CN7	D-3	Q7	A-6
CN8	D-6	Q8	C-1
CN9	D-6	Q9	C-1
CN10	D-6	Q10	C-1
CN11	C-6	Q11	B-1
D1	A-6	Q12	A-4
D2	A-6	Q13	B-4
D3	A-6	Q14	B-4
D4	D-2	Q15	A-5
D5	D-1	Q16	A-4
D6	A-1		
D7	B-1	S1	B-6
D8	C-1		
D9	D-1	X1	A-1
D10	B-5		
D11	B-5		
D12	B-5		
D13	A-4		
D14	B-4		
D15	B-4		
D16	B-4		
IC1	C-3		
IC2	C-5		
IC3	C-4		
IC4	C-2		
IC5	B-3		
IC6	A-2		
IC7	A-2		
IC8	D-2		
IC9	B-1		
IC10	A-4		
IC11	B-3		
IC12	A-3		
IC13	D-3		
IC14	A-3		
IC15	A-4		
IC16	C-3		
IC17	A-6		
IC18	A-5		

*:B(Soldering)Side mount



1-650-045-11 B SIDE

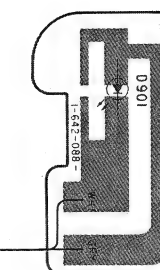
B Side is the same as Solder Side.

DUS-736 BOARD



1-651-135-11 A SIDE

GOMA BOARD

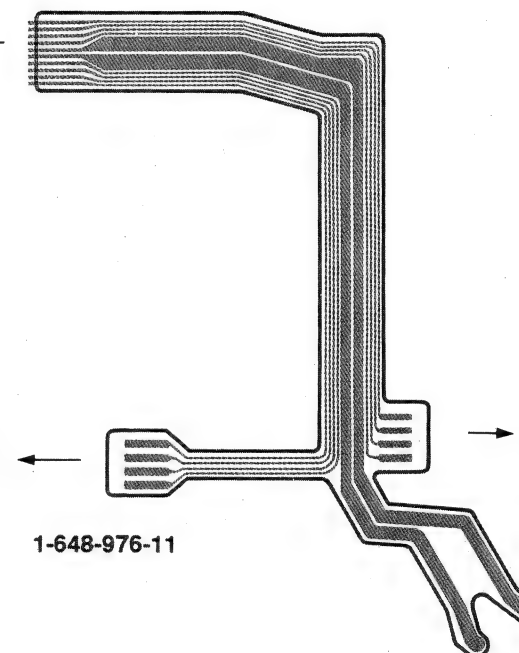


1-642-088-11

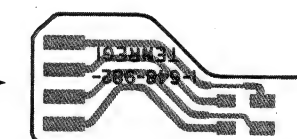
to CN3

TENREGI MOTOR ENCODER FLEXIBLE BOARD

to CN10



TENREGI BOARD



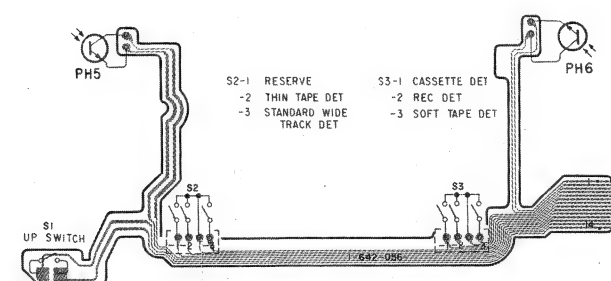
1-648-982-11

to DRIVE MOTOR

RECOGNI END FLEXIBLE BOARD

to ROTARY ENCODER

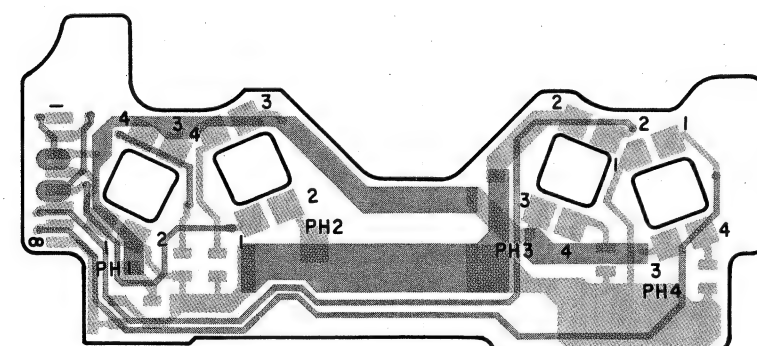
1-648-976-11



1-642-056-12

to CN6

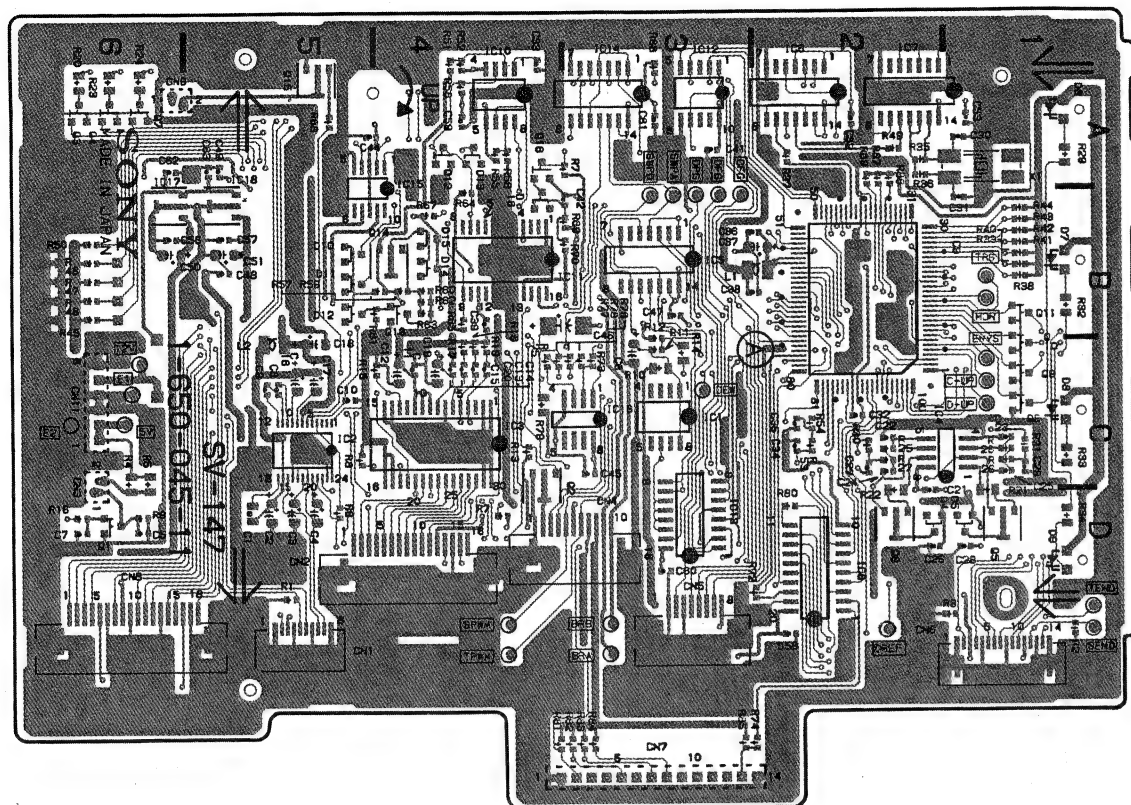
REEL FG BOARD



1-648-983-11 SOLDER SIDE PATTERN
1-648-983-11 COMPONENT SIDE PATTERN

SV-147 BOARD
A Side

Serial No. J ;10001 to 10110
UC;20001 to 20055
EK;50001 to 50235



1-650-045-11 A SIDE

A Side is the same as Component Side.

DUS-736 BOARD

Serial No. J ;10001 to 10110
UC;20001 to 20055
EK;50001 to 50235



1-651-135-11 A SIDE

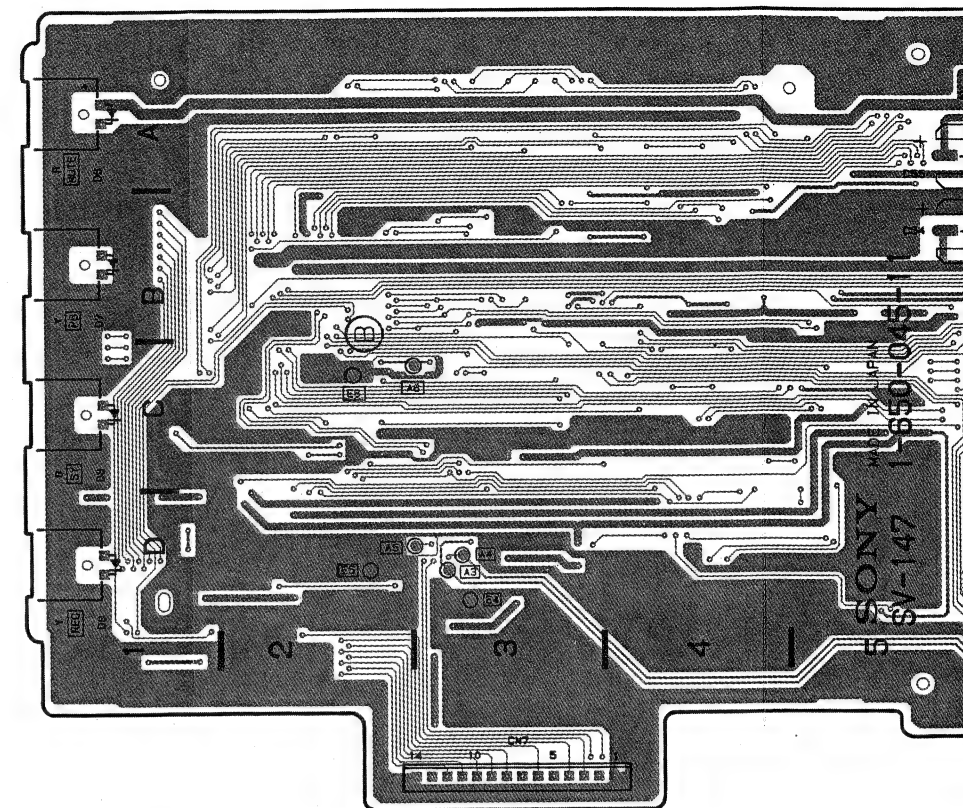
SV-147 BOARD
1-650-045-11

CN1	D-5	Q1	D-6
CN2	D-5	Q2	C-3
CN3	C-6	Q3	A-6
CN4	D-3	Q4	A-6
CN5	D-3	Q5	D-1
CN6	D-2	Q6	D-2
CN7	D-3	Q7	A-6
CN8	D-6	Q8	C-1
CN10	D-6	Q9	C-1
CN11	C-6	Q10	C-1
		Q11	B-1
D1	+A-6	Q12	A-4
D2	+A-6	Q13	B-4
D3	+A-6	Q14	B-4
D4	D-2	Q15	A-5
D5	D-1	Q16	A-4
D6	A-1		
D7	B-1	S1	+B-6
D8	C-1		
D9	D-1	X1	A-1
D10	B-5		
D11	B-5		
D12	B-5		
D13	A-4		
D14	B-4		
D15	B-4		
D16	B-4		
IC1	C-3		
IC2	C-5		
IC3	C-4		
IC4	C-2		
IC5	B-3		
IC6	A-2		
IC7	A-2		
IC8	D-2		
IC9	B-1		
IC10	A-4		
IC11	B-3		
IC12	A-3		
IC13	D-3		
IC14	A-3		
IC15	A-4		
IC16	C-3		
IC17	A-6		
IC18	A-5		

*;B(Soldering)Side mount

SV-147 BOARD
B Side

Serial No. J ;10001 to 10110
UC;20001 to 20055
EK;50001 to 50235

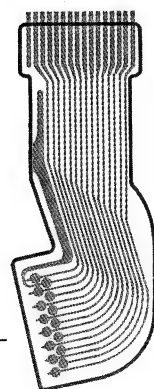


1-650-045-11 B SIDE

B Side is the same as Solder Side.

CAPSTAN FLEXIBLE BOARD

to CN2

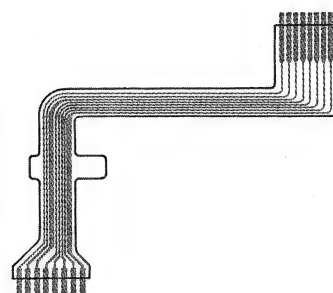


1-648-979-11

to CAPSTAN MOTOR

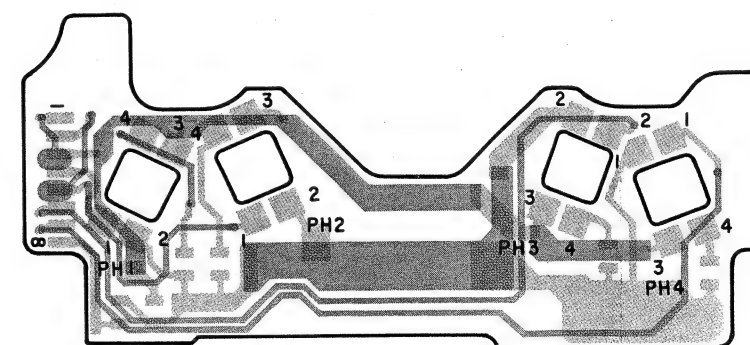
REEL FG.DEW FLEXIBLE BOARD

to CN5



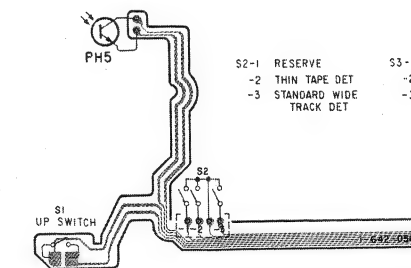
1-648-978-11

REEL FG BOARD



1-648-983-11 SOLDER SIDE PATTERN
1-648-983-11 COMPONENT SIDE PATTERN

RECOGNI END FLEXIBLE BO



1-642-056-12

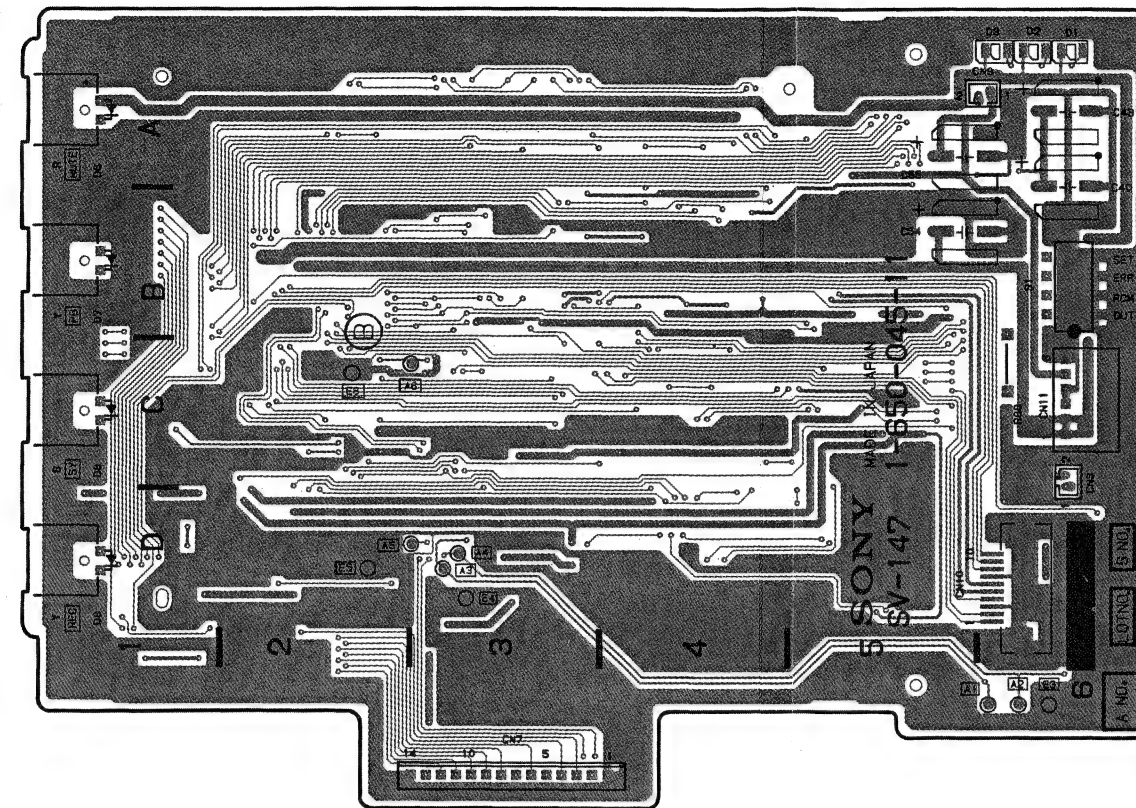
SV-147 BOARD
B Side

Serial No. J ;10001 to 10110
UC ;20001 to 20055
EK ;50001 to 50235

SV-147 BOARD
1-650-045-11

CN1	D-5	Q1	D-6
CN2	D-5	Q2	C-3
CN3	C-6	Q3	A-6
CN4	D-3	Q4	A-6
CN5	D-3	Q5	D-1
CN6	D-2	Q6	D-2
CN7	D-3	Q7	A-6
CN8	D-6	Q8	C-1
CN10	D-6	Q9	C-1
CN11	C-6	Q10	C-1
D1	A-6	Q11	B-1
D2	A-6	Q12	A-4
D3	A-6	Q13	B-4
D4	D-2	Q14	B-4
D5	D-1	Q15	A-5
D6	A-1	Q16	A-4
D7	B-1	S1	B-6
D8	C-1	X1	A-1
D9	D-1		
D10	B-5		
D11	B-5		
D12	B-5		
D13	A-4		
D14	B-4		
D15	B-4		
D16	B-4		
IC1	C-3		
IC2	C-5		
IC3	C-4		
IC4	C-2		
IC5	B-3		
IC6	A-2		
IC7	A-2		
IC8	D-2		
IC9	B-1		
IC10	A-4		
IC11	B-3		
IC12	A-3		
IC13	D-3		
IC14	A-3		
IC15	A-4		
IC16	C-3		
IC17	A-6		
IC18	A-5		

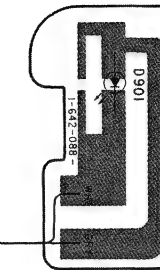
*:B(Soldering)Side mount



1-650-045-11 B SIDE

B Side is the same as Solder Side.

GOMA BOARD

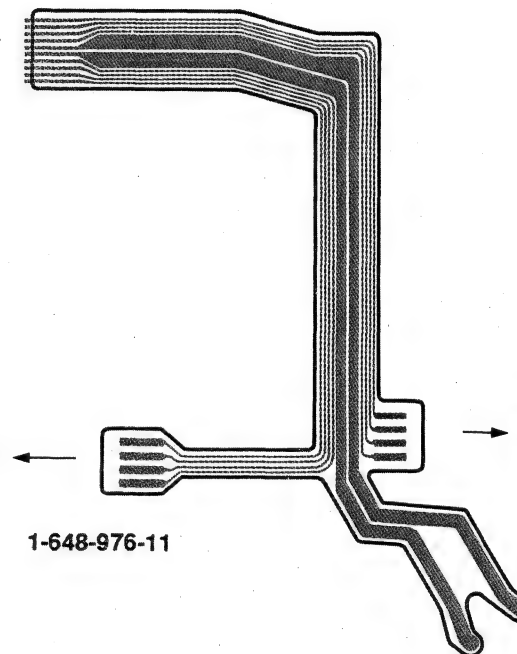


1-642-088-11

to CN3

TENREGI MOTOR ENCODER FLEXIBLE BOARD

to CN10



TENREGI BOARD

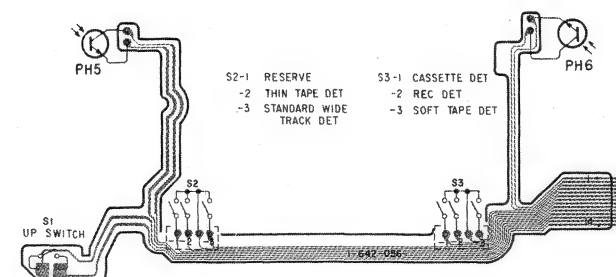


1-648-982-11

to DRIVE MOTOR

RECOGNI END FLEXIBLE BOARD

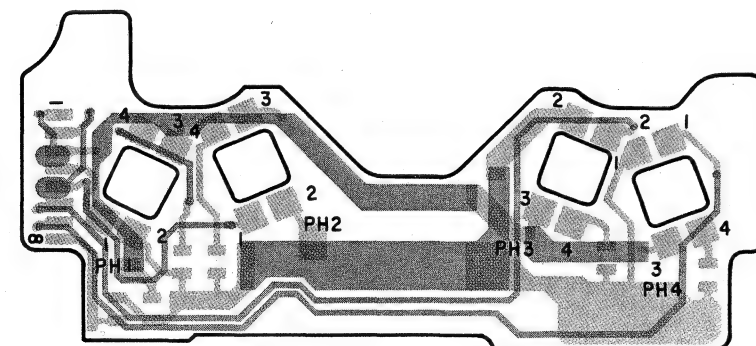
to ROTARY ENCODER



1-642-056-12

to CN6

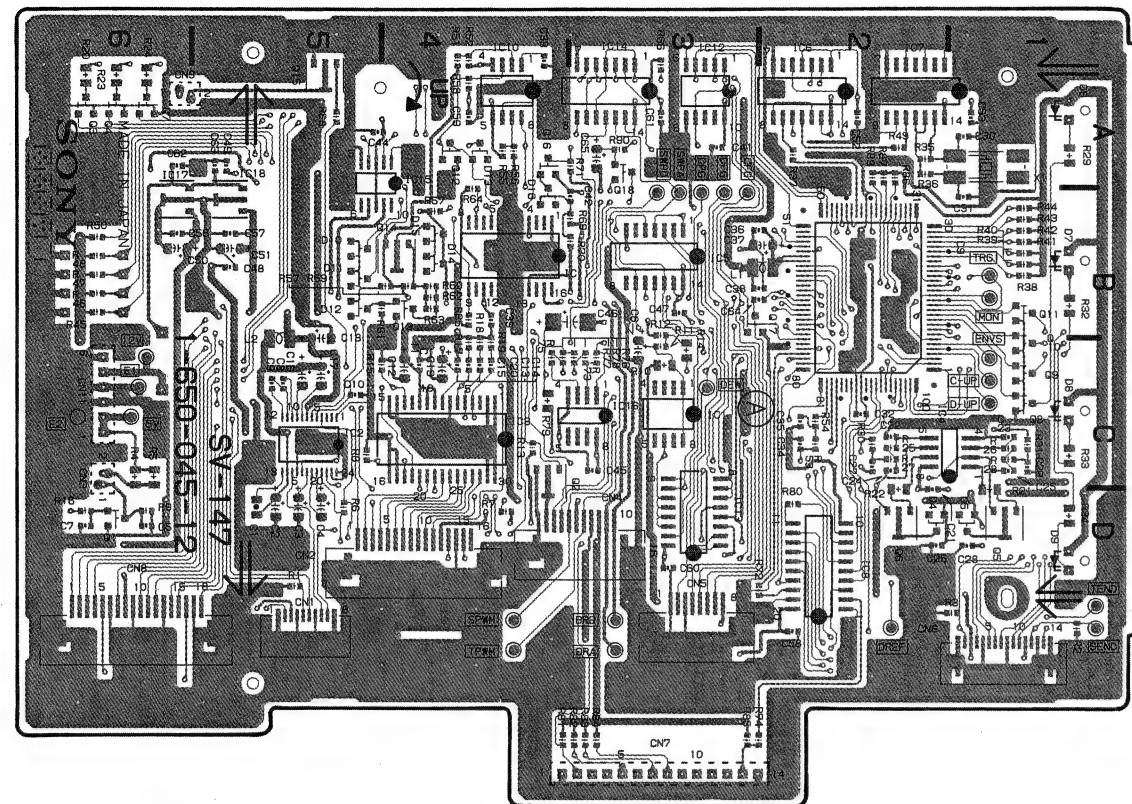
REEL FG BOARD



1-648-983-11 SOLDER SIDE PATTERN
1-648-983-11 COMPONENT SIDE PATTERN

SV-147 BOARD
A Side

Serial No. J ;10111 and higher
UC;20056 and higher
EK;50236 and higher

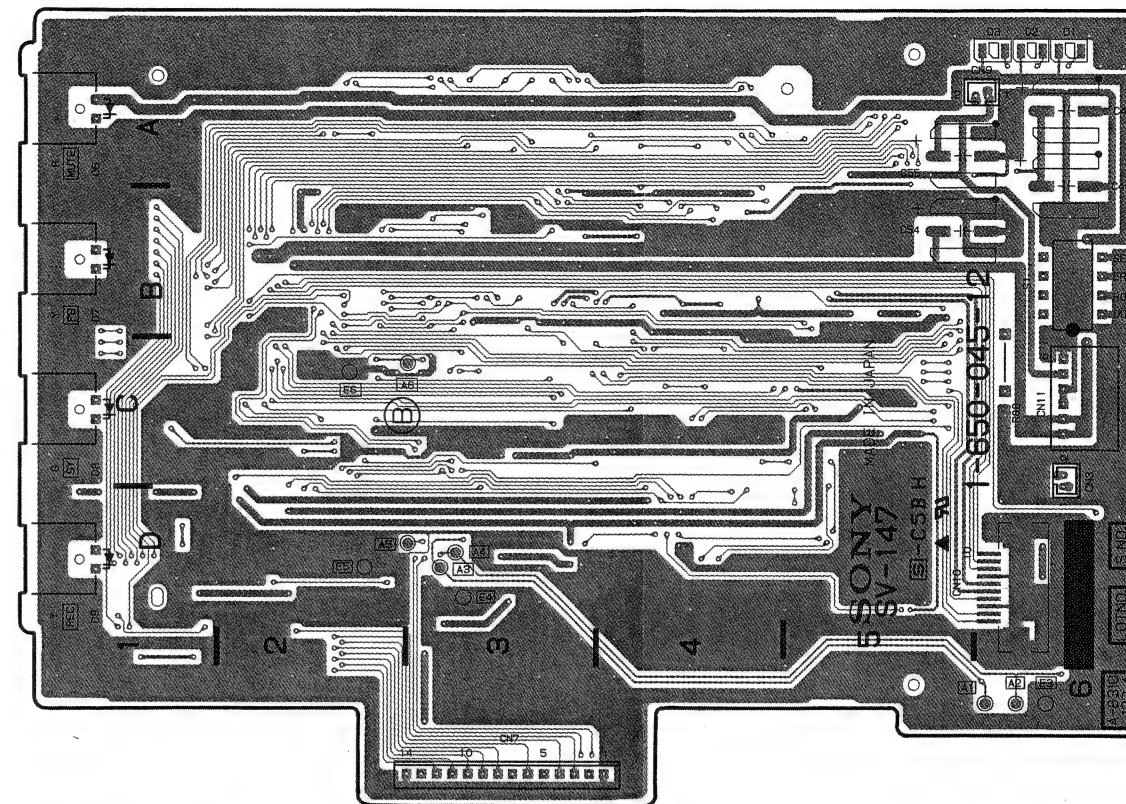


1-650-045-12 A SIDE

A Side is the same as Component Side.

SV-147 BOARD
B Side

Serial No. J ;10111 and higher
UC;20056 and higher
EK;50236 and higher



1-650-045-12 B SIDE

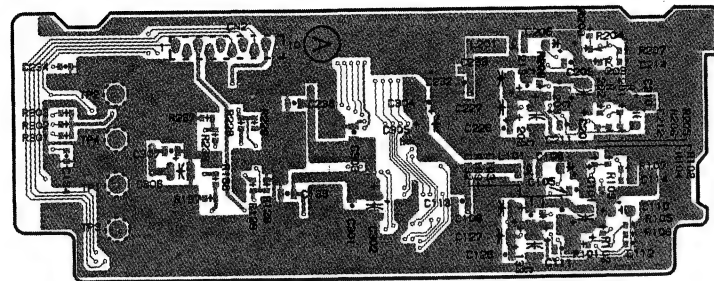
B Side is the same as Solder Side.

SV-147 BOARD
1-650-045-12

CN1	D-5	L1	B-3
CN2	D-5	L2	B-6
CN3	C-6		
CN4	D-3	Q1	D-6
CN5	D-3	Q2	C-3
CN6	D-2	Q3	A-6
CN7	D-3	Q4	A-6
CN8	D-6	Q5	D-1
CN10	D-6	Q6	D-2
CN11	C-6	Q7	A-6
		Q8	C-1
D1	A-6	Q9	C-1
D2	A-6	Q10	C-1
D3	A-6	Q11	B-1
D4	D-2	Q12	A-4
D5	D-1	Q13	B-4
D6	A-1	Q14	B-4
D7	B-1	Q15	A-5
D8	C-1	Q16	A-4
D9	D-1	Q17	B-2
D10	B-5	Q18	B-3
D11	B-5		
D12	B-5	S1	B-6
D13	A-4		
D14	B-4	X1	A-1
D15	B-4		
D16	B-4		
IC1	C-3		
IC2	C-5		
IC3	C-4		
IC4	C-2		
IC5	B-3		
IC6	A-2		
IC7	A-2		
IC8	D-2		
IC9	B-1		
IC10	A-4		
IC11	B-3		
IC12	A-3		
IC13	D-3		
IC14	A-3		
IC15	A-4		
IC16	C-3		
IC17	A-6		
IC18	A-5		

*;B(Soldering)Side mount

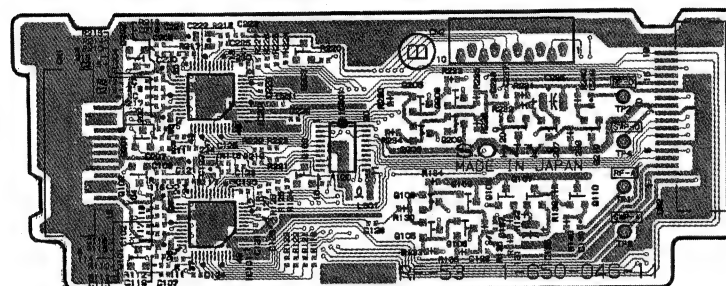
RF-53 BOARD
A Side



1-650-046-11 A SIDE

A Side is the same as Component Side.

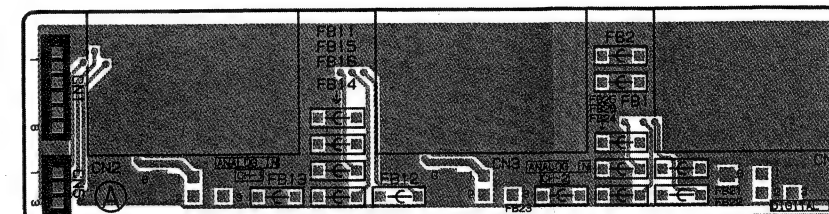
RF-53 BOARD
B Side



1-650-046-11 B SIDE

B Side is the same as Solder Side.

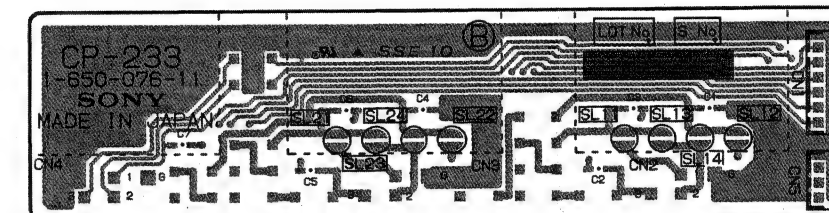
CP-233A/233B BOARD
A Side



1-650-076-11 A SIDE

A Side is the same as Component Side.

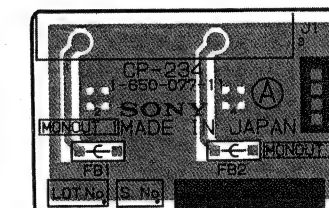
CP-233A/233B BOARD
B Side



1-650-076-11 B SIDE

B Side is the same as Solder Side.

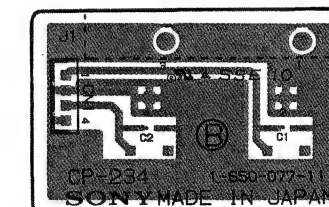
CP-234 BOARD
A Side



1-650-077-11 A SIDE

A Side is the same as Component Side.

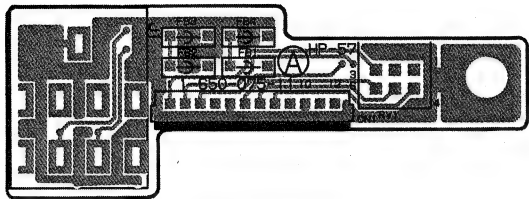
CP-234 BOARD
B Side



1-650-077-11 B SIDE

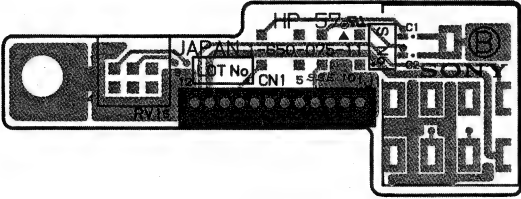
B Side is the same as Solder Side.

HP-57 BOARD
A Side



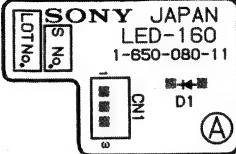
1-650-075-11 A SIDE
A Side is the same as Component Side.

HP-57 BOARD
B Side



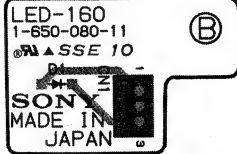
1-650-075-11 B SIDE
B Side is the same as Solder Side.

LED-160 BOARD
A Side



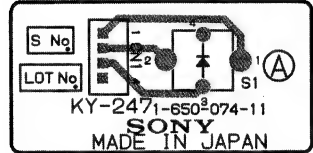
1-650-080-11 A SIDE
A Side is the same as Component Side.

LED-160 BOARD
B Side



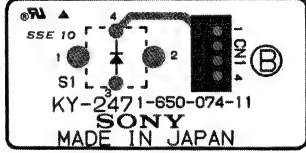
1-650-080-11 B SIDE
B Side is the same as Solder Side.

KY-247 BOARD
A Side



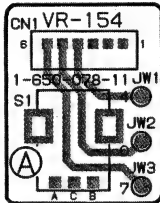
1-650-074-11 A SIDE
A Side is the same as Component Side.

KY-247 BOARD
B Side



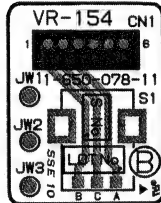
1-650-074-11 B SIDE
B Side is the same as Solder Side.

VR-154 BOARD
A Side



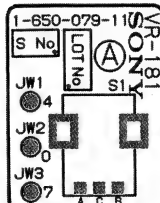
1-650-078-11 A SIDE
A Side is the same as Component Side.

VR-154 BOARD
B Side



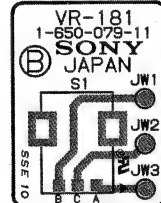
1-650-078-11 B SIDE
B Side is the same as Solder Side.

VR-181 BOARD
A Side



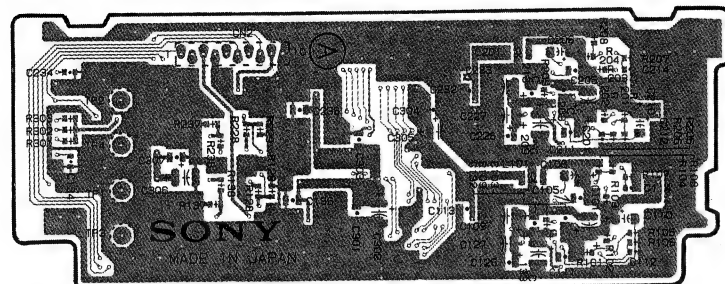
1-650-079-11 A SIDE
A Side is the same as Component Side.

VR-181 BOARD
B Side



1-650-079-11 B SIDE
B Side is the same as Solder Side.

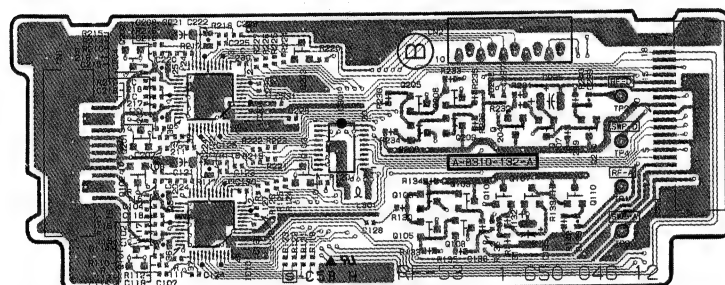
RF-53 BOARD
A Side



1-650-046-11,12 A SIDE

A Side is the same as Component Side.

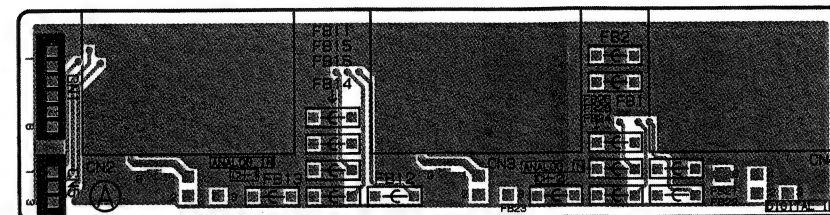
RF-53 BOARD
B Side



1-650-046-11,12 B SIDE

B Side is the same as Solder Side.

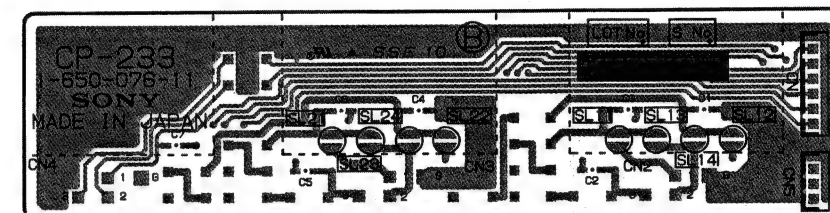
CP-233A/233B BOARD
A Side



1-650-076-11 A SIDE

A Side is the same as Component Side.

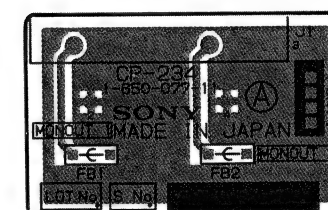
CP-233A/233B BOARD
B Side



1-650-076-11 B SIDE

B Side is the same as Solder Side.

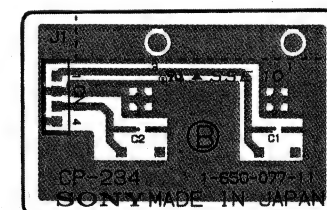
CP-234 BOARD
A Side



1-650-077-11 A SIDE

A Side is the same as Component Side.

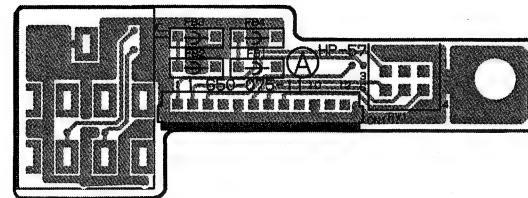
CP-234 BOARD
B Side



1-650-077-11 B SIDE

B Side is the same as Solder Side.

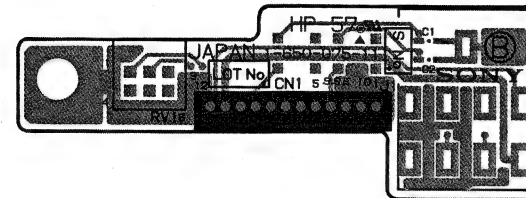
HP-57 BOARD
A Side



1-650-075-11 A SIDE

A Side is the same as Component Side.

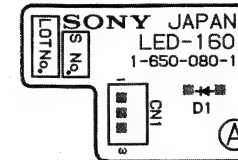
HP-57 BOARD
B Side



1-650-075-11 B SIDE

B Side is the same as Solder Side.

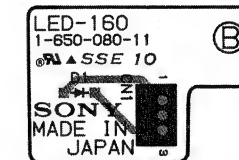
LED-160 BOARD
A Side



1-650-080-11 A SIDE

A Side is the same as Component Side.

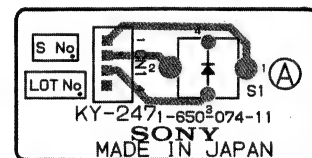
LED-160 BOARD
B Side



1-650-080-11 B SIDE

B Side is the same as Solder Side.

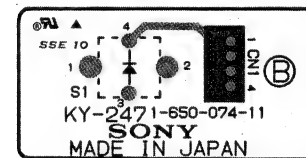
KY-247 BOARD
A Side



1-650-074-11 A SIDE

A Side is the same as Component Side.

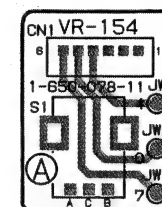
KY-247 BOARD
B Side



1-650-074-11 B SIDE

B Side is the same as Solder Side.

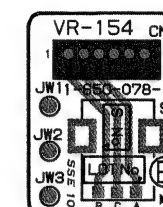
VR-154 BOARD
A Side



1-650-078-11 A SIDE

A Side is the same as Component Side.

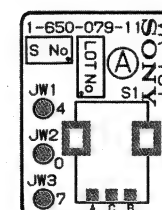
VR-154 BOARD
B Side



1-650-078-11 B SIDE

B Side is the same as Solder Side.

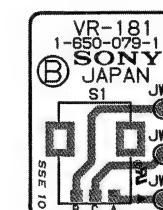
VR-181 BOARD
A Side



1-650-079-11 A SIDE

A Side is the same as Component Side.

VR-181 BOARD
B Side



1-650-079-11 B SIDE

B Side is the same as Solder Side.

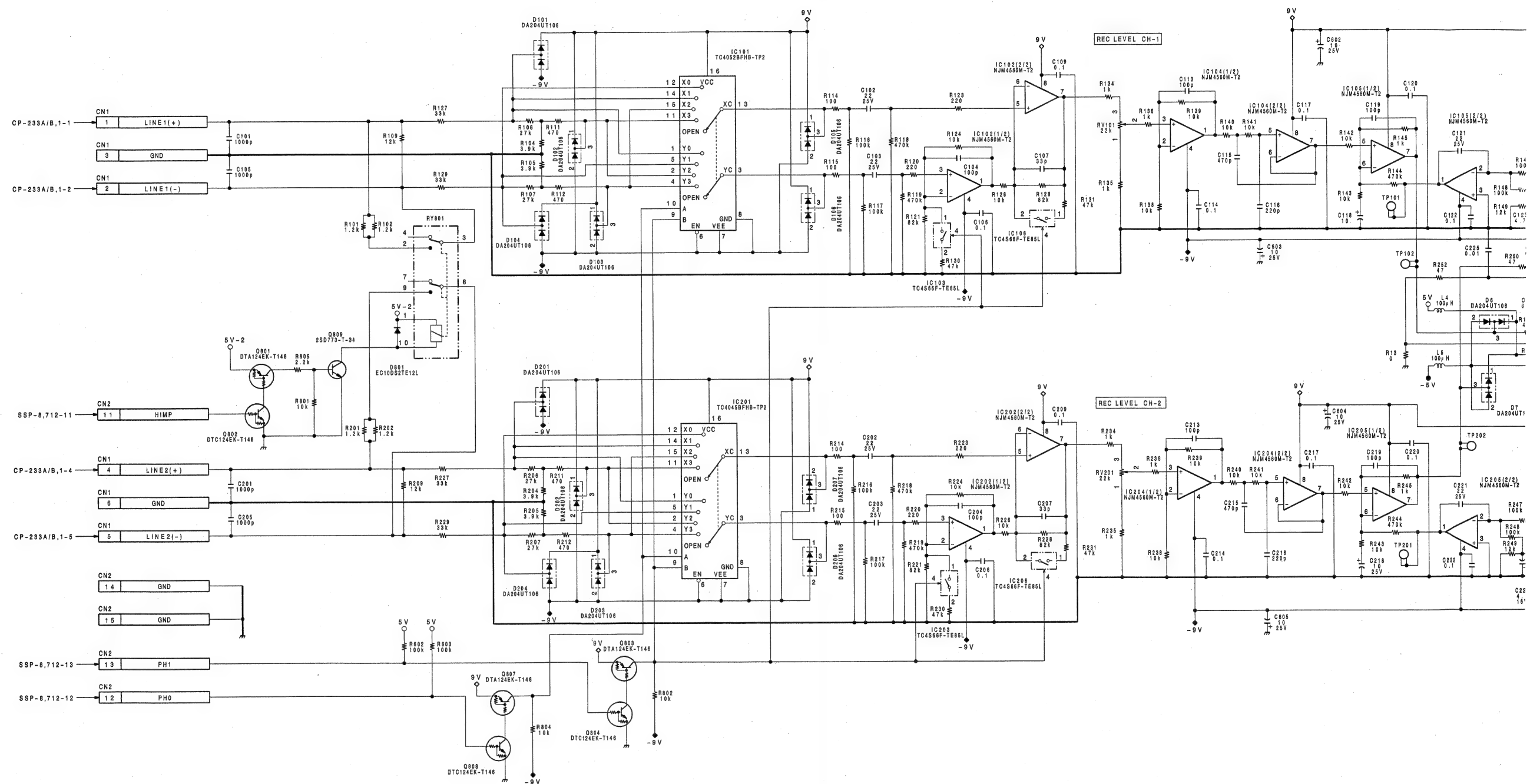
SECTION 5

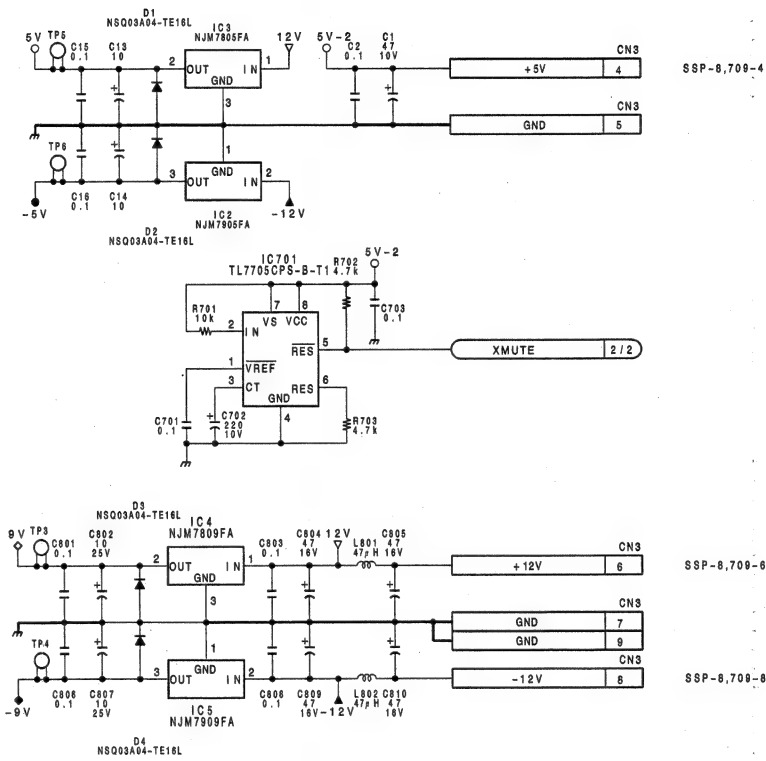
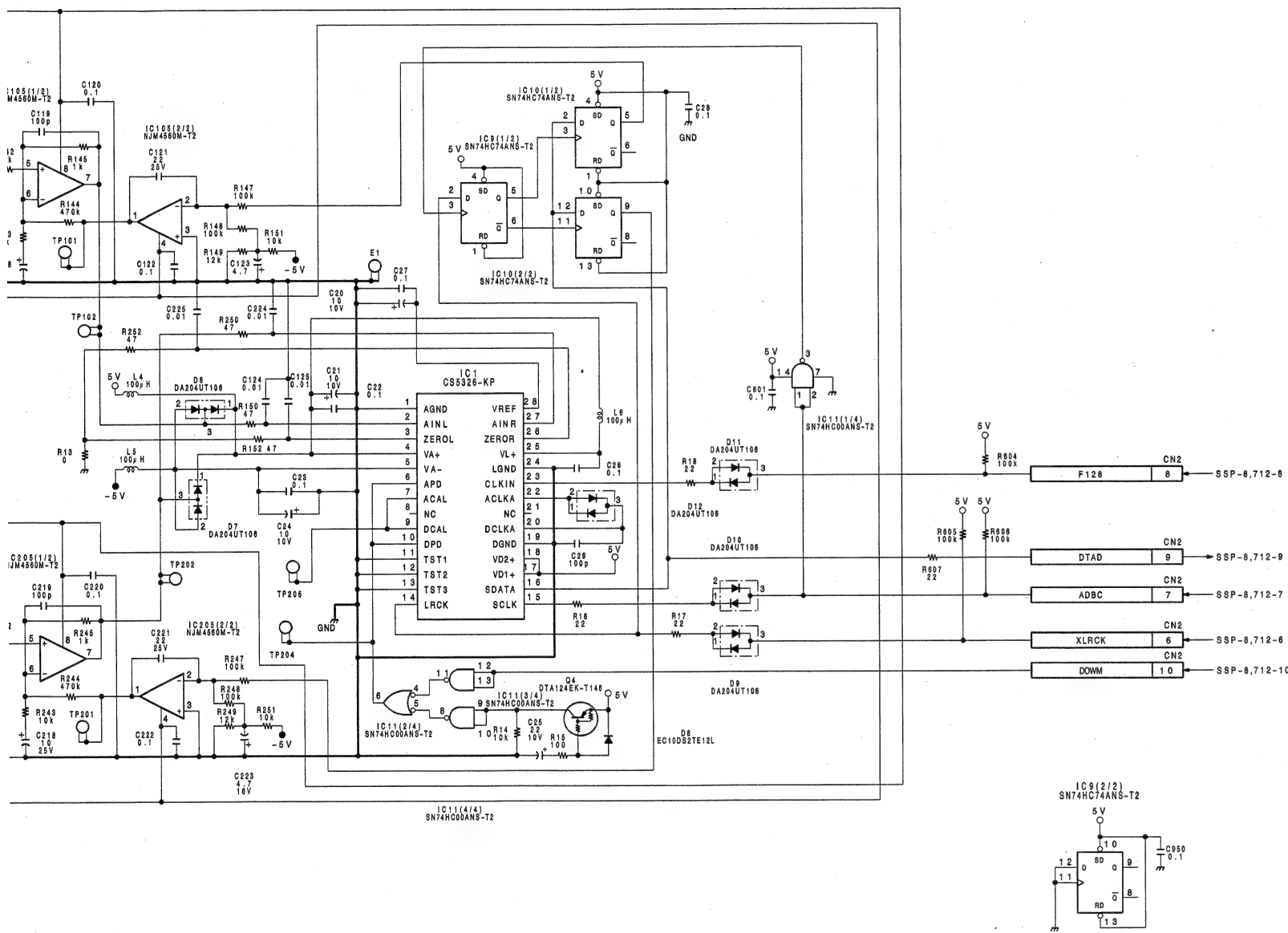
SCHEMATIC DIAGRAMS

Board	Function	Page
A ADA-31	Rec Audio,A/D Converter,PB Audio,D/A Converter	5-2
R RF-53	RF Amplifier.....	5-12
S SSP-8	System Control,Signal Processor	5-4
SV-147	Servo	5-13
Frame wiring		5-14
OTHERS		
GOMA		5-13
RECOGNI END FLEXIBLE		5-13
REEL FG		5-13

ADA-31 BOARD (1/2)
c Audio,A/D Converter
Audio,D/A Converter

Serial No. J ;10081 to 10110
UC;20036 to 20055
EK;50156 to 50235



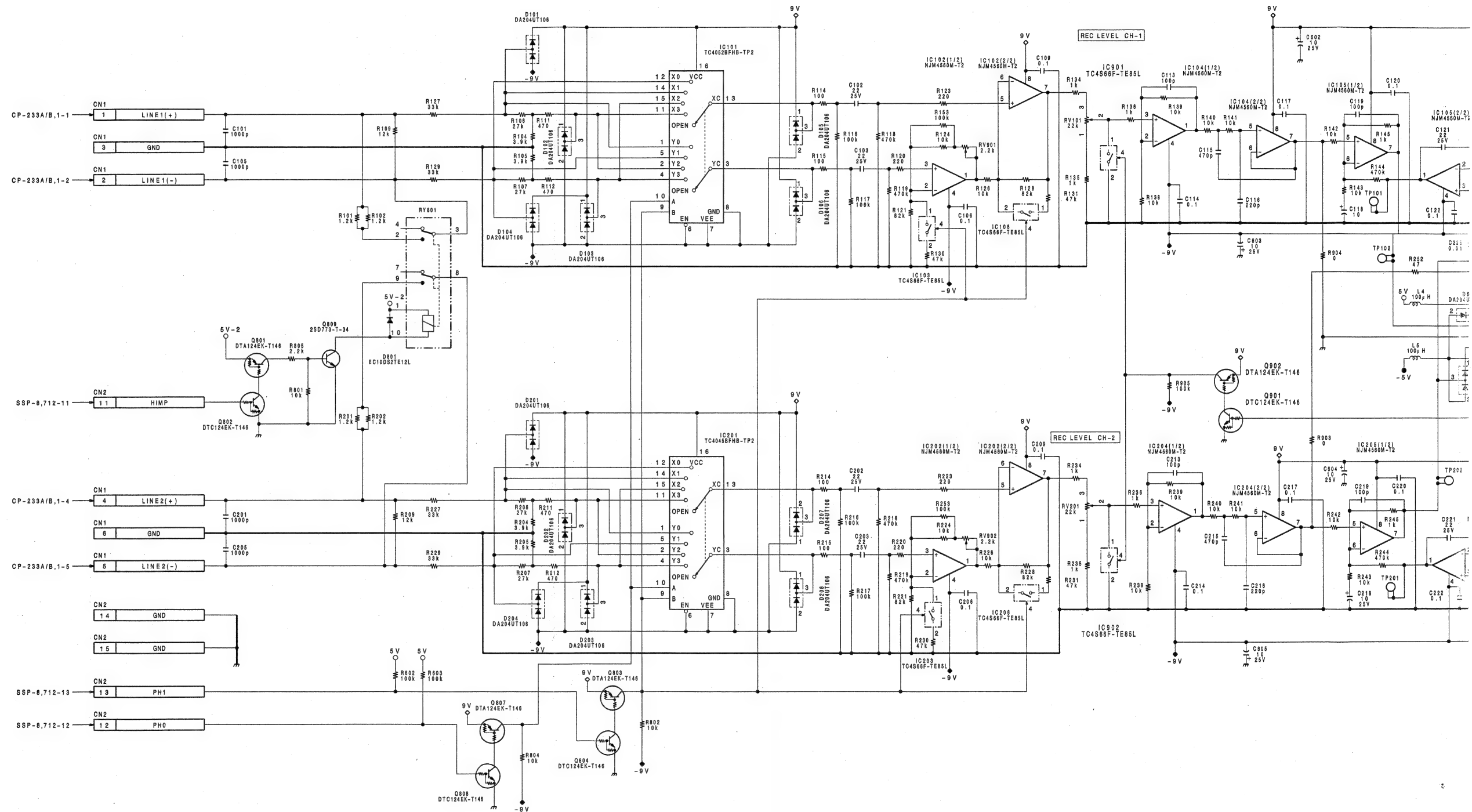


ADA-31 BOARD (1 / 2)

BOARD NO.1-650-073-11
PCM-E7700

ADA-31 BOARD (1/2)
Rec Audio, A/D Converter
PB Audio, D/A Converter

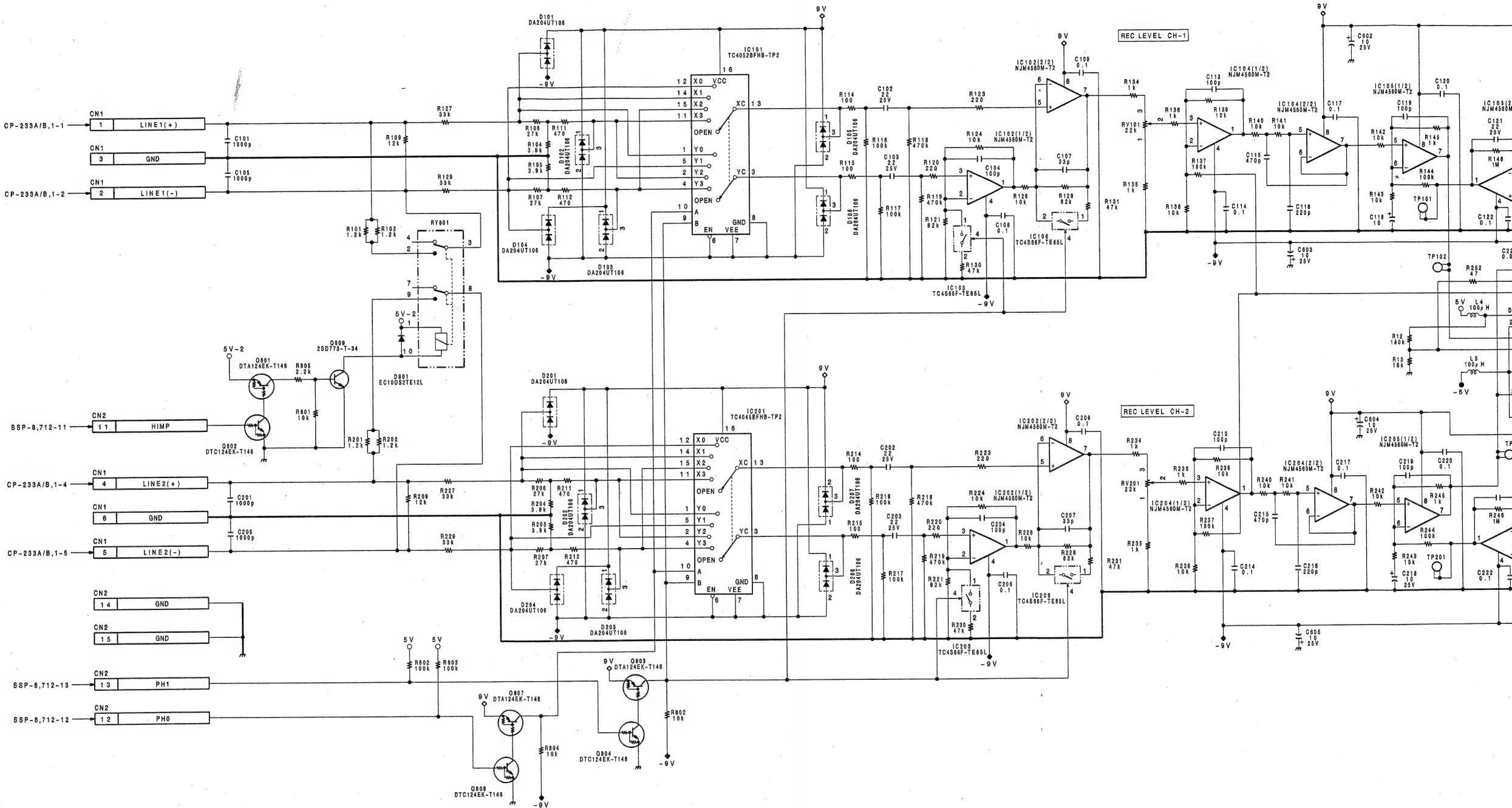
Serial No. J ;10111 and higher
UC;20056 and higher
EK;50236 and higher

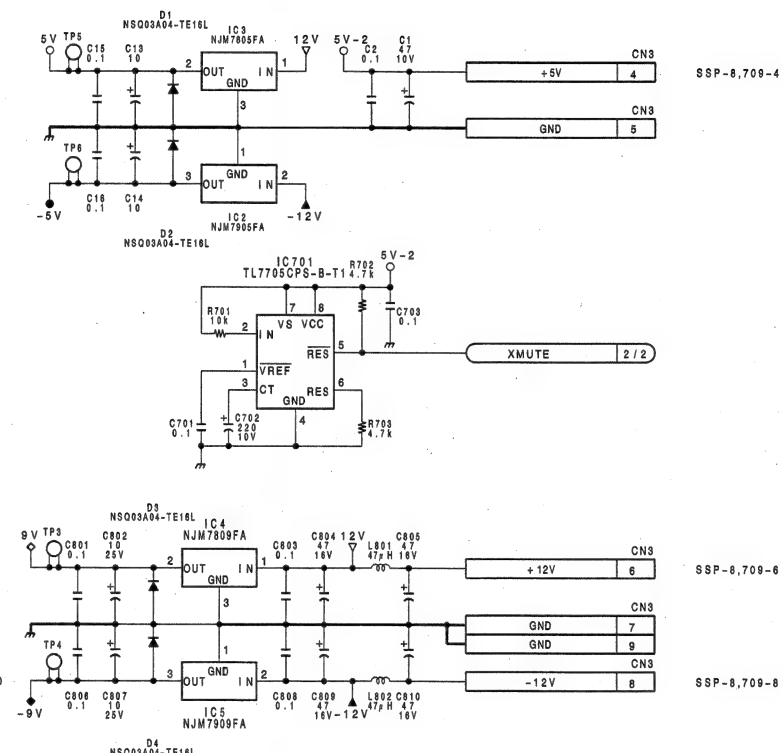
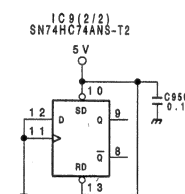
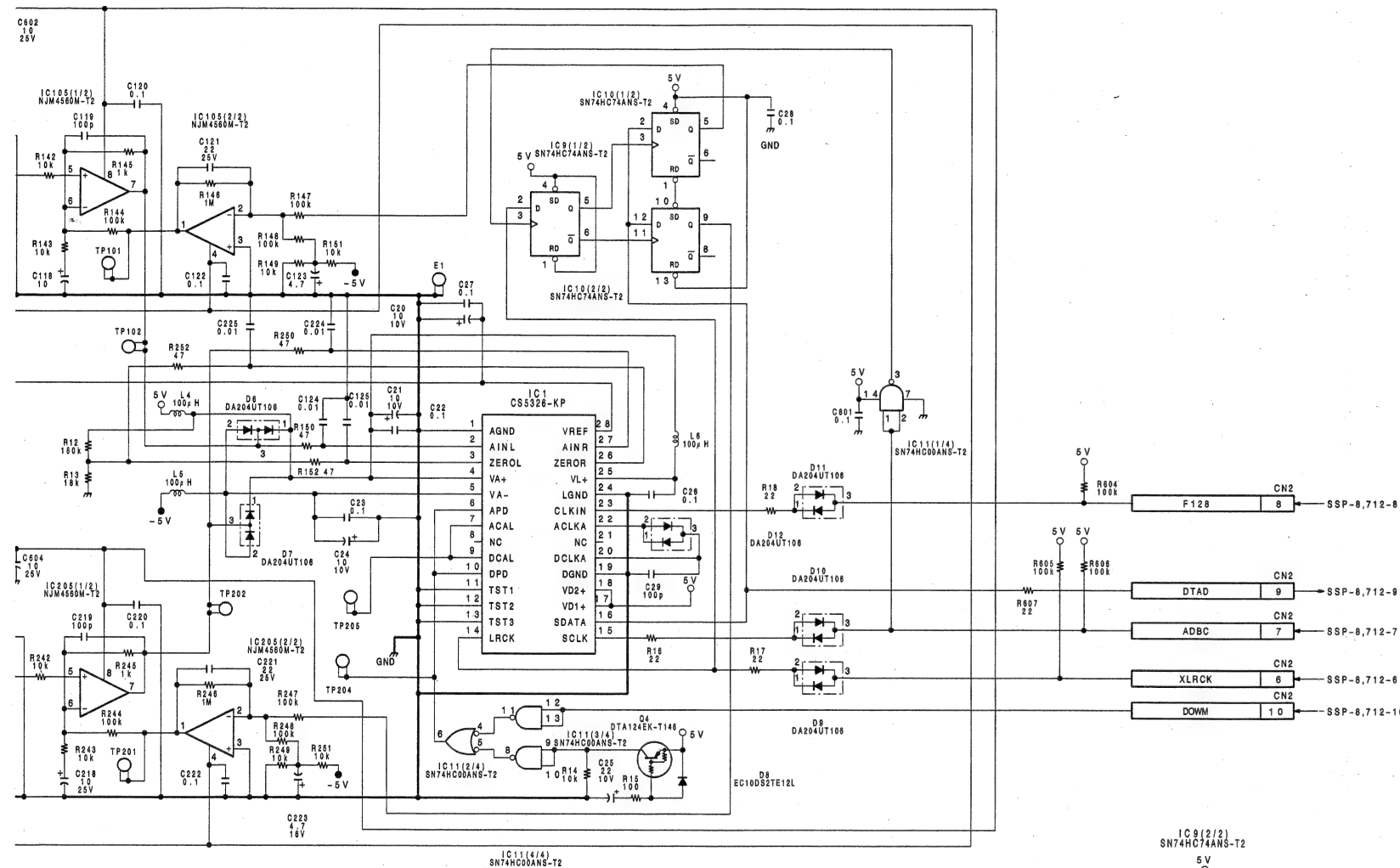


ADA-31 BOARD (1/2)

Rec Audio,A/D Converter

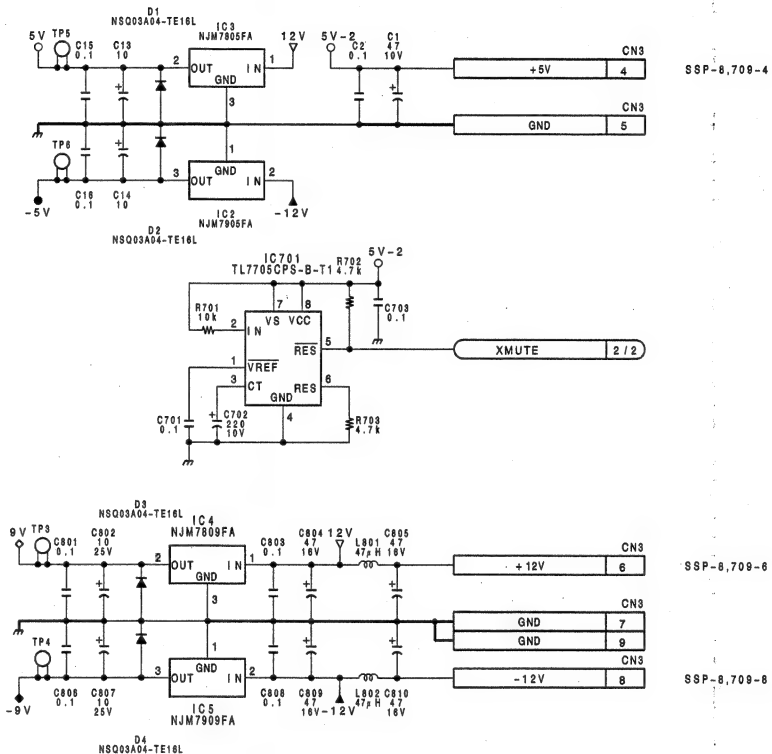
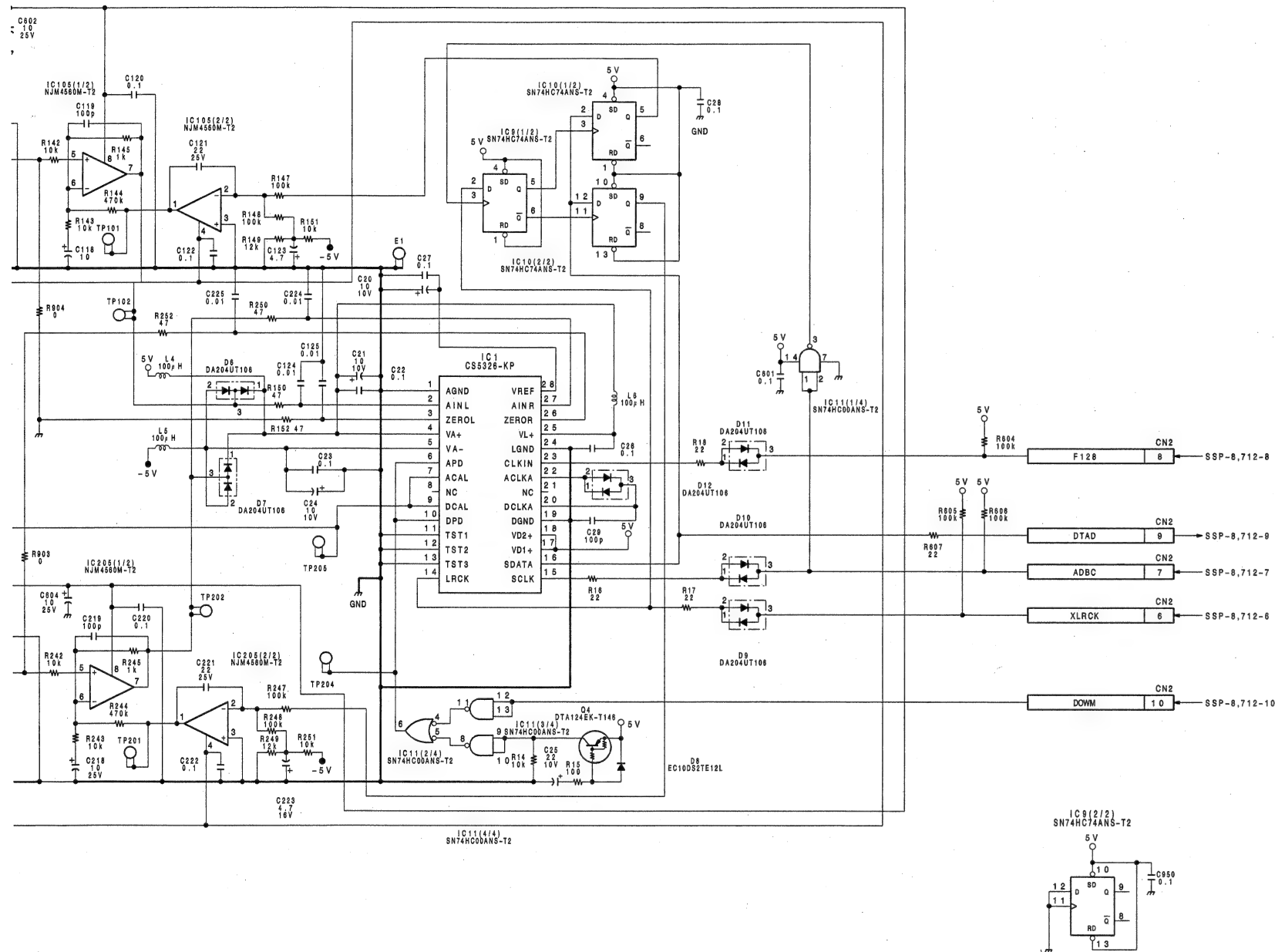
PB Audio,D/A Converter





ADA-31 BOARD (1/2)

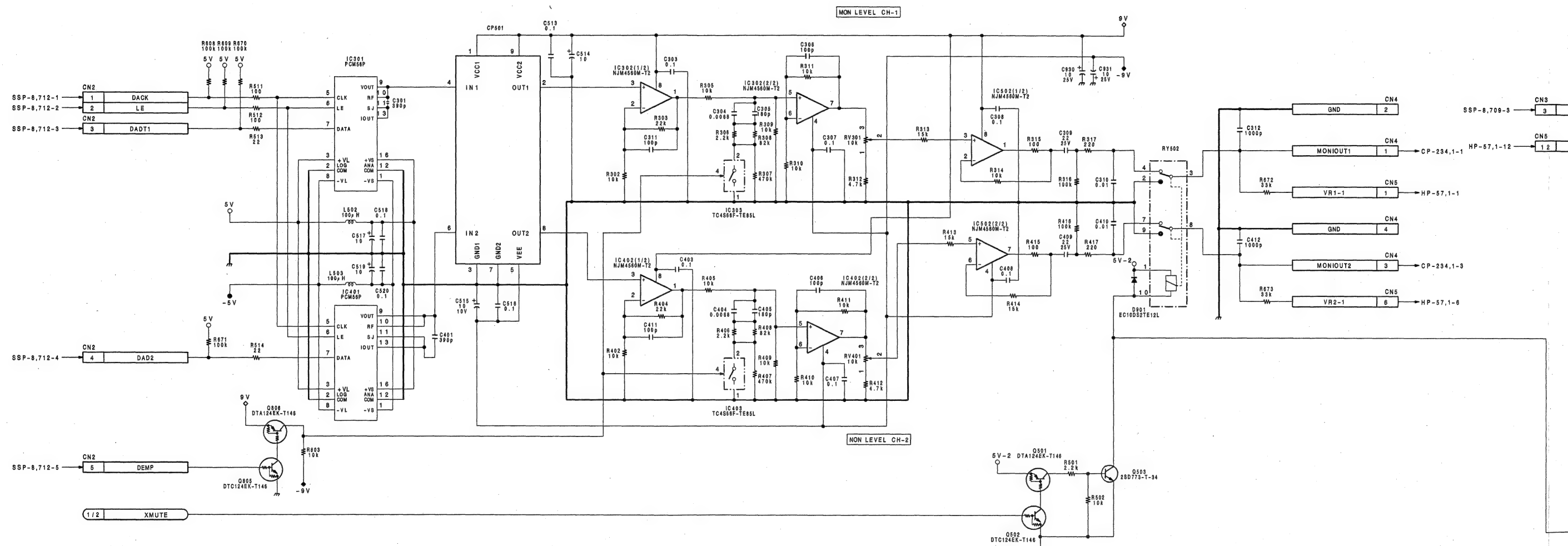
BOARD NO.1-650-073-11
PCM-E7700

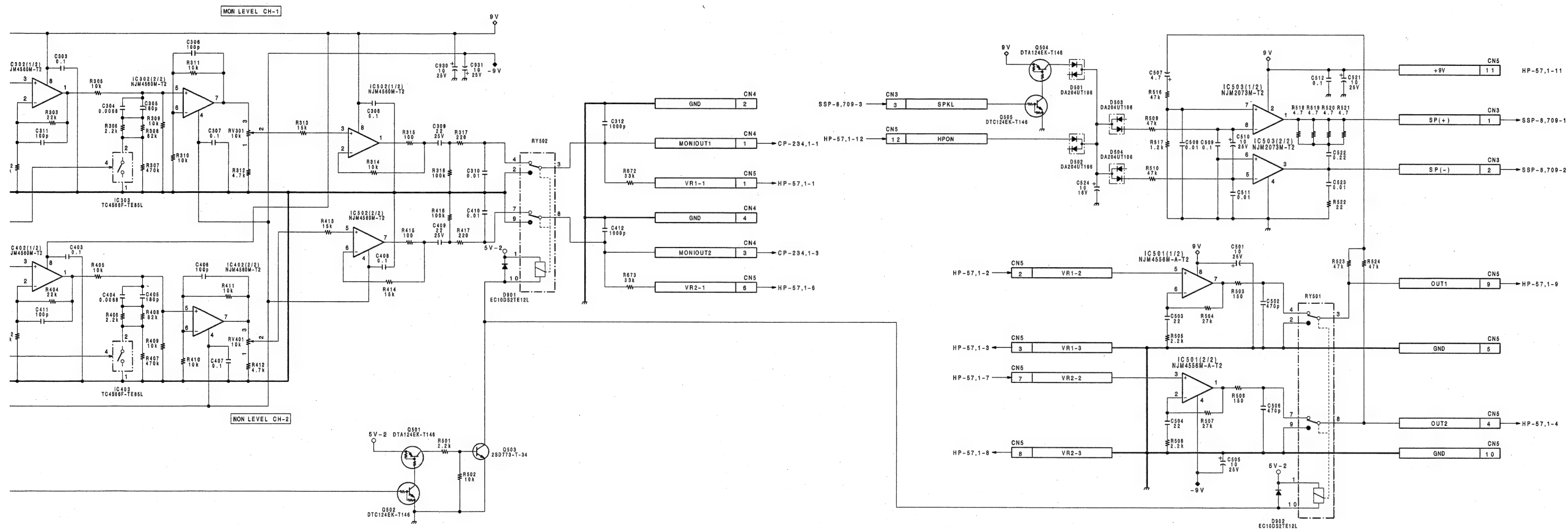


ADA-31 BOARD (1 / 2)

BOARD NO.1-650-073-12
PCM-E7700

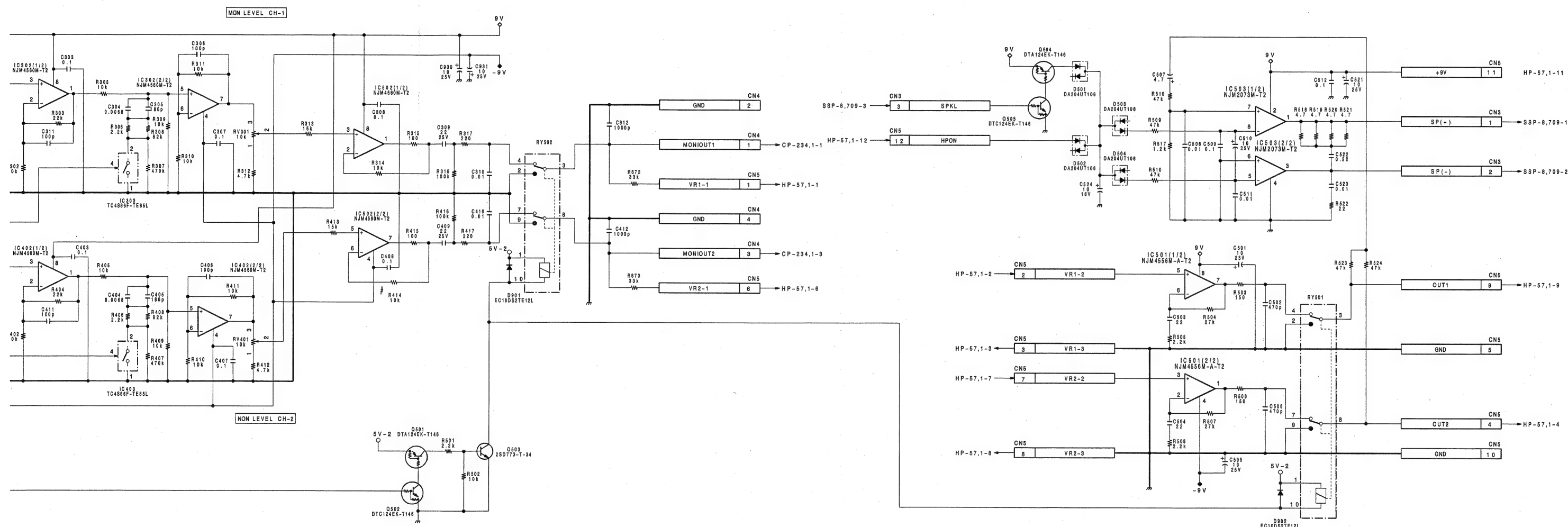
ADA-31 BOARD (2/2)
Rec Audio,A/D Converter
PB Audio,D/A Converter





ADA-31 BOARD (2 / 2)

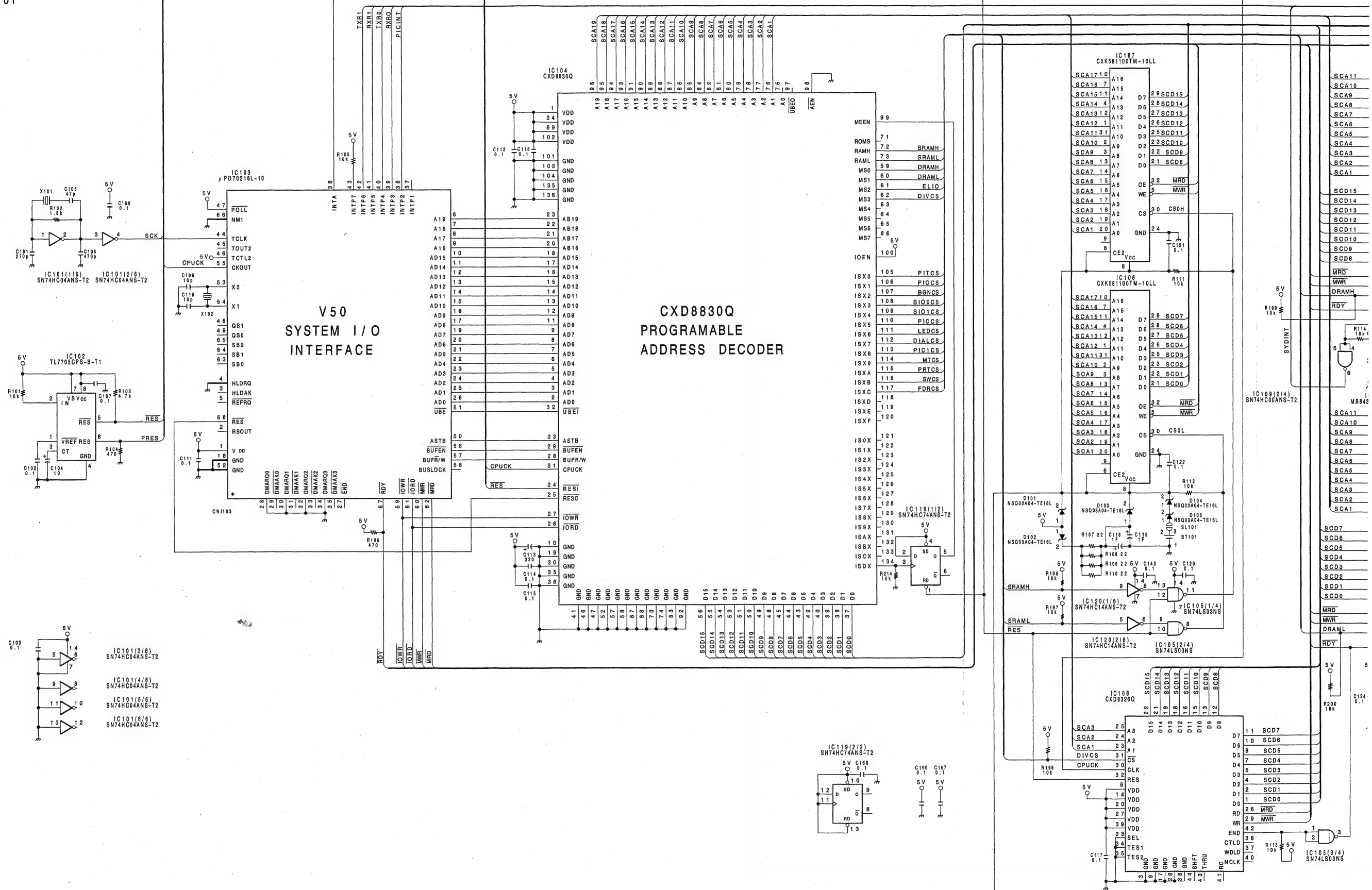
BOARD NO.1-650-073-11
PCM-E7700

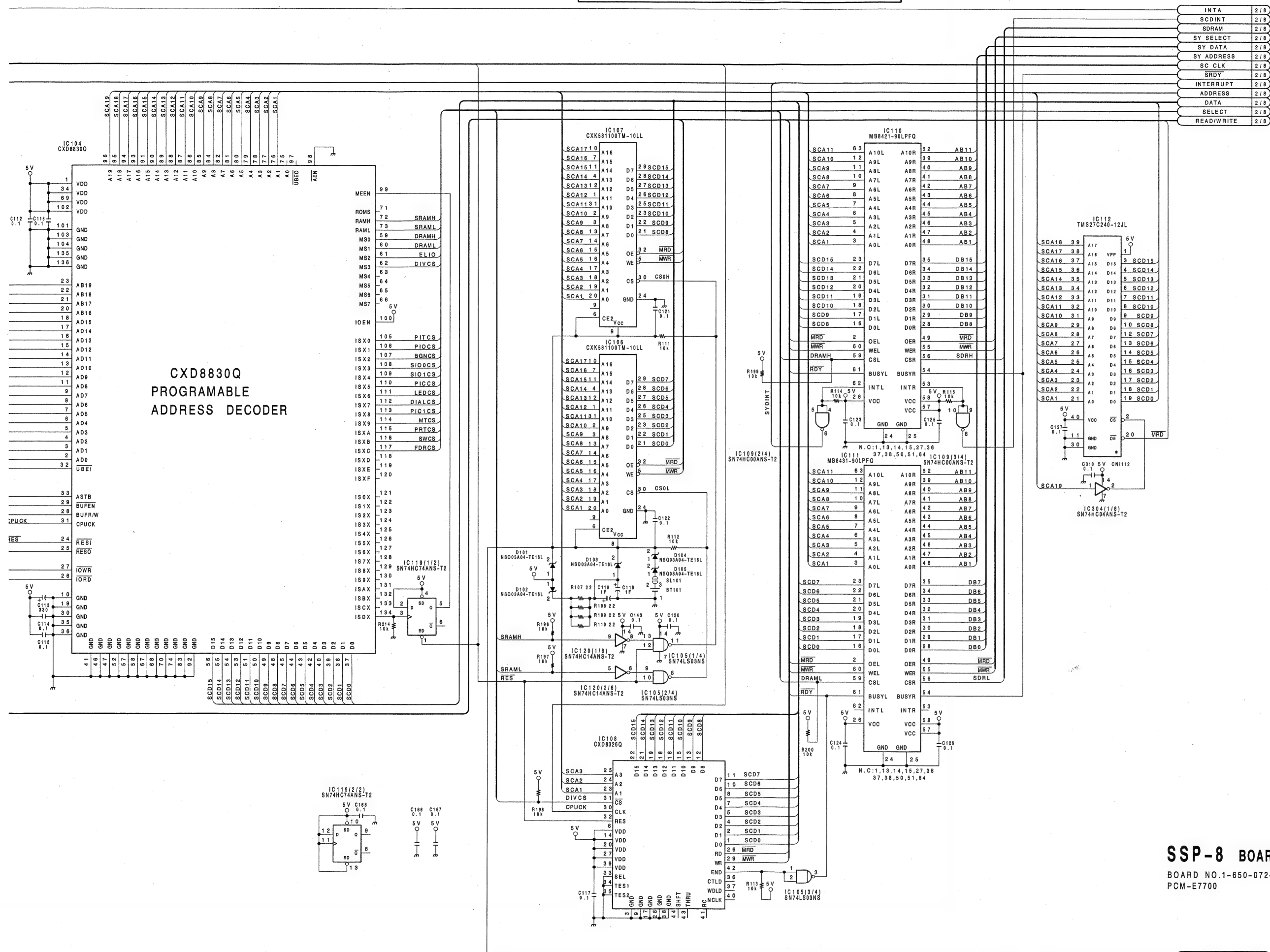


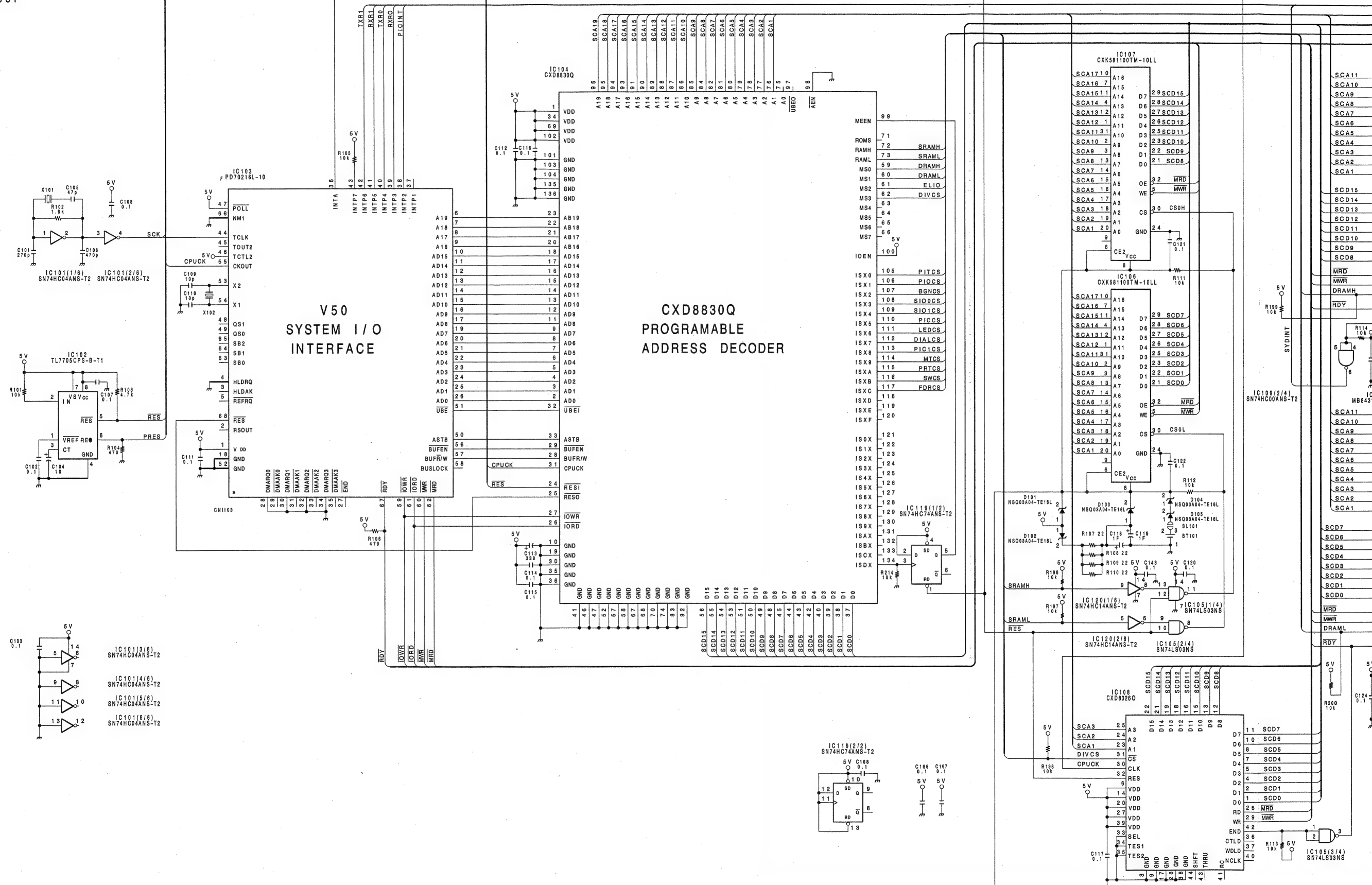
# Changed Information	
Applied Serial No.	Parts that have been changed.
J ;10111 and higher	C515 10V → 50V
UC ;20056 and higher	R414 15K → 10K
EK ;50236 and higher	R513,514 22 → 100

ADA-31 BOARD (2 / 2)

BOARD NO.1-650-073-11,12
PCM-E7700

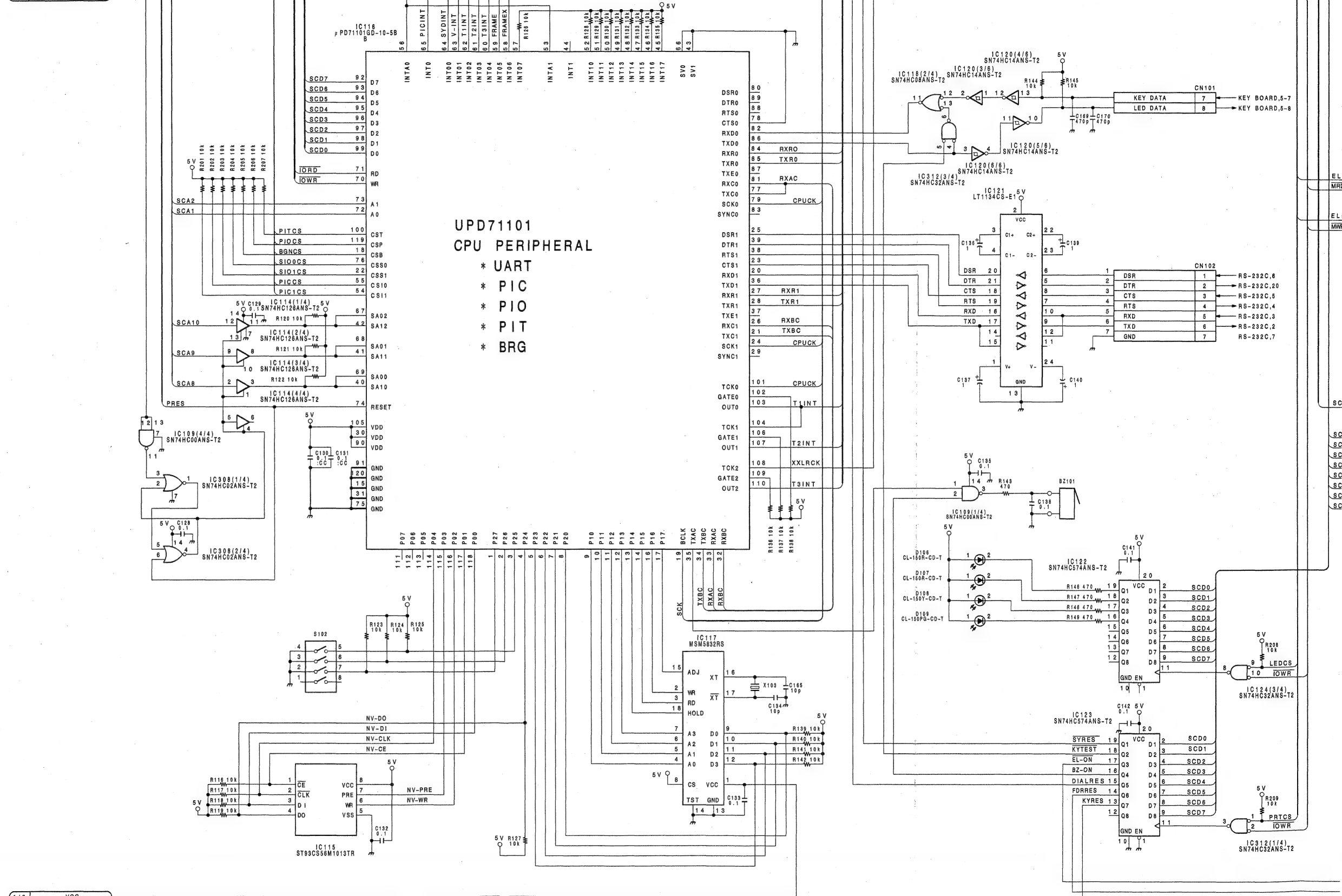
SSP-8 BOARD (1/8)
System Control, Signal Processor



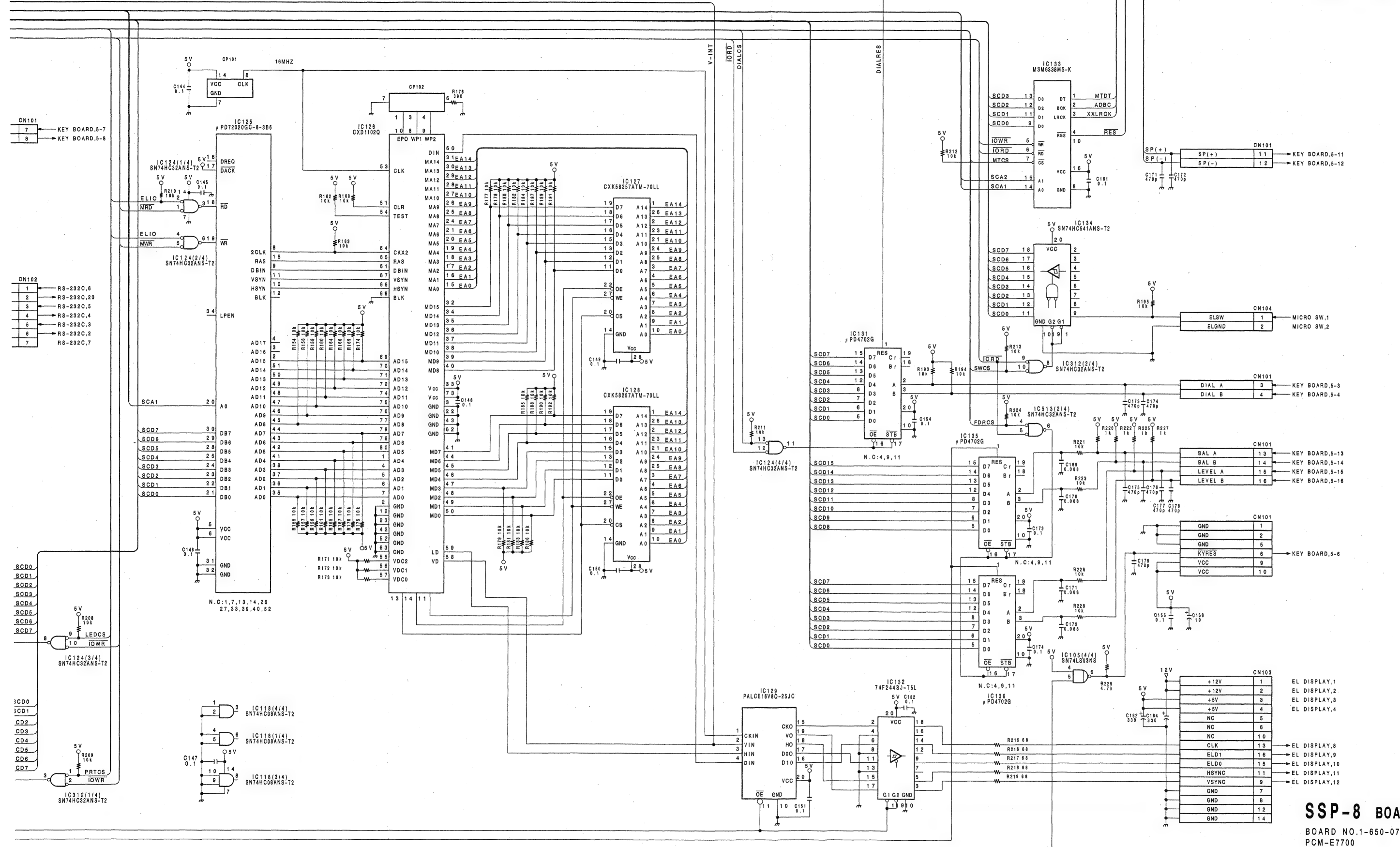
SSP-8 BOARD (1/8)
System Control, Signal Processor



1/8	INTA
1/8	SCDINT
1/8	SDRAM
1/8	SY SELECT
1/8	SY DATA
1/8	SY ADDRESS
1/8	SC CLK
1/8	SRDY
1/8	INTERRUPT
1/8	ADDRESS
1/8	DATA
1/8	SELECT
1/8	READ/WRITE



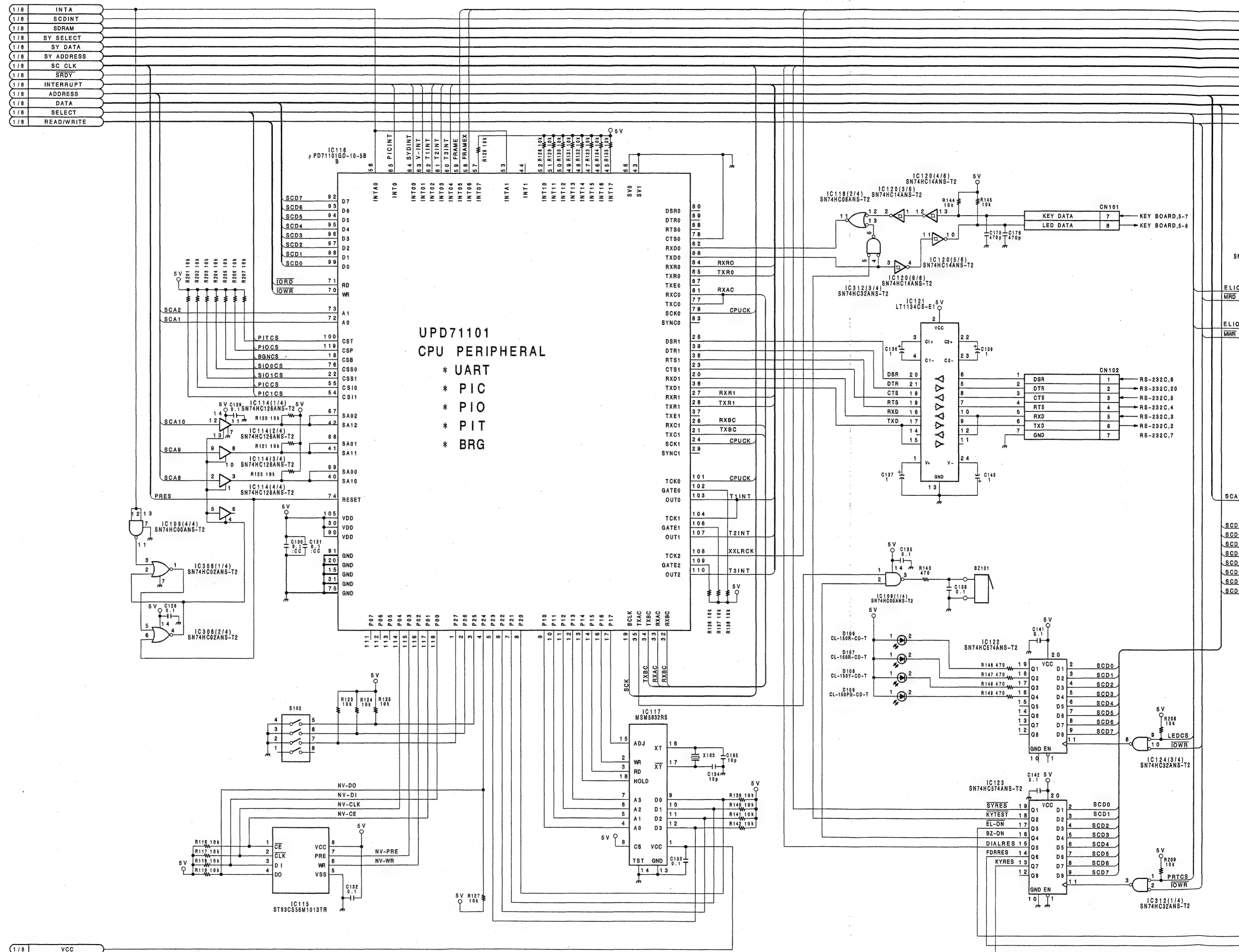
SP DATA	3/8
SCDINT	3/8
SDRAM	3/8
SY SELECT	3/8
SY DATA	3/8
SY ADDRESS	3/8
SC CLK	3/8
SRDY	3/8



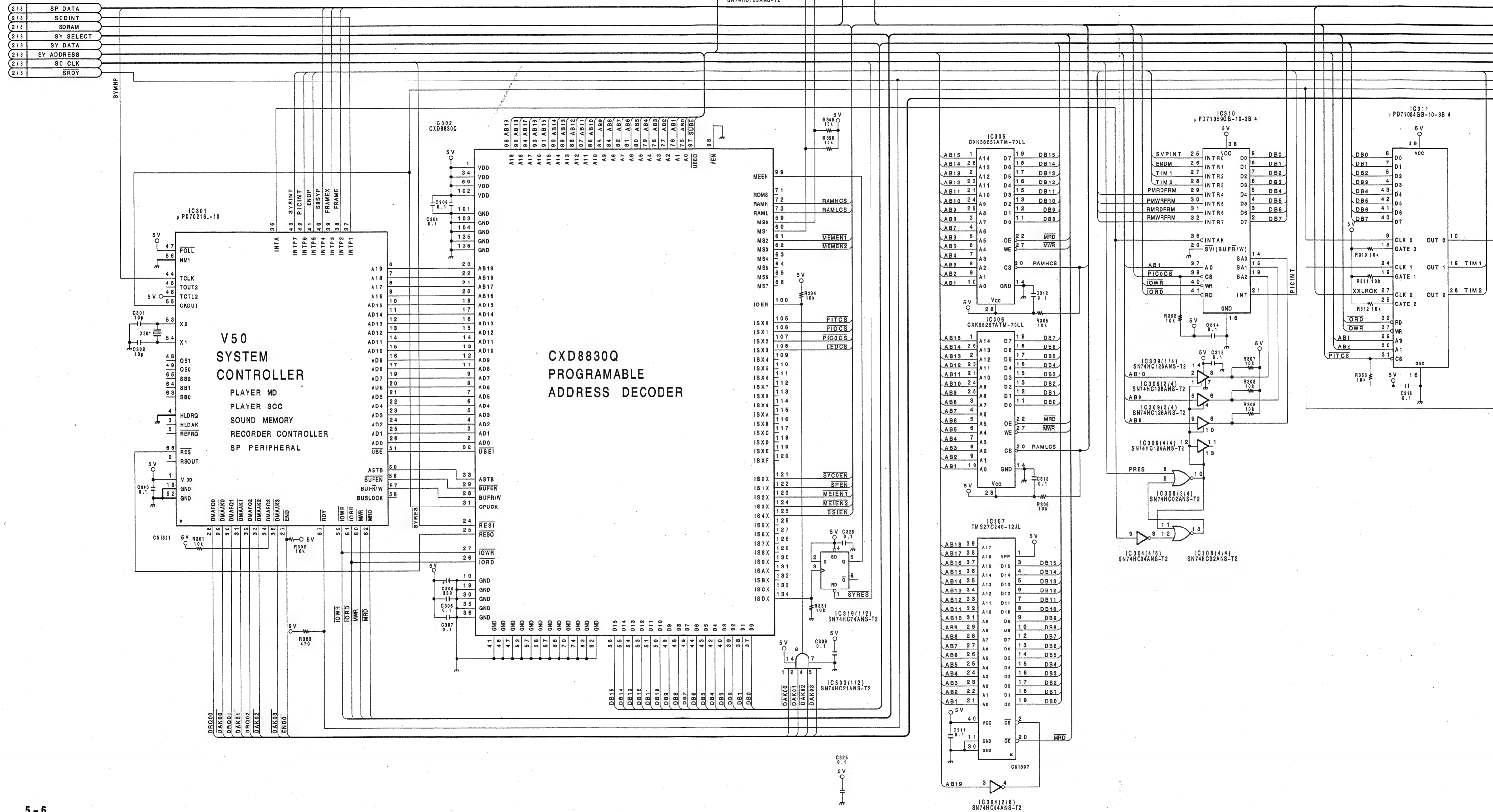
SSP-8 BOARD (2/8)

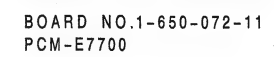
BOARD NO.1-650-072-11
PCM-E7700

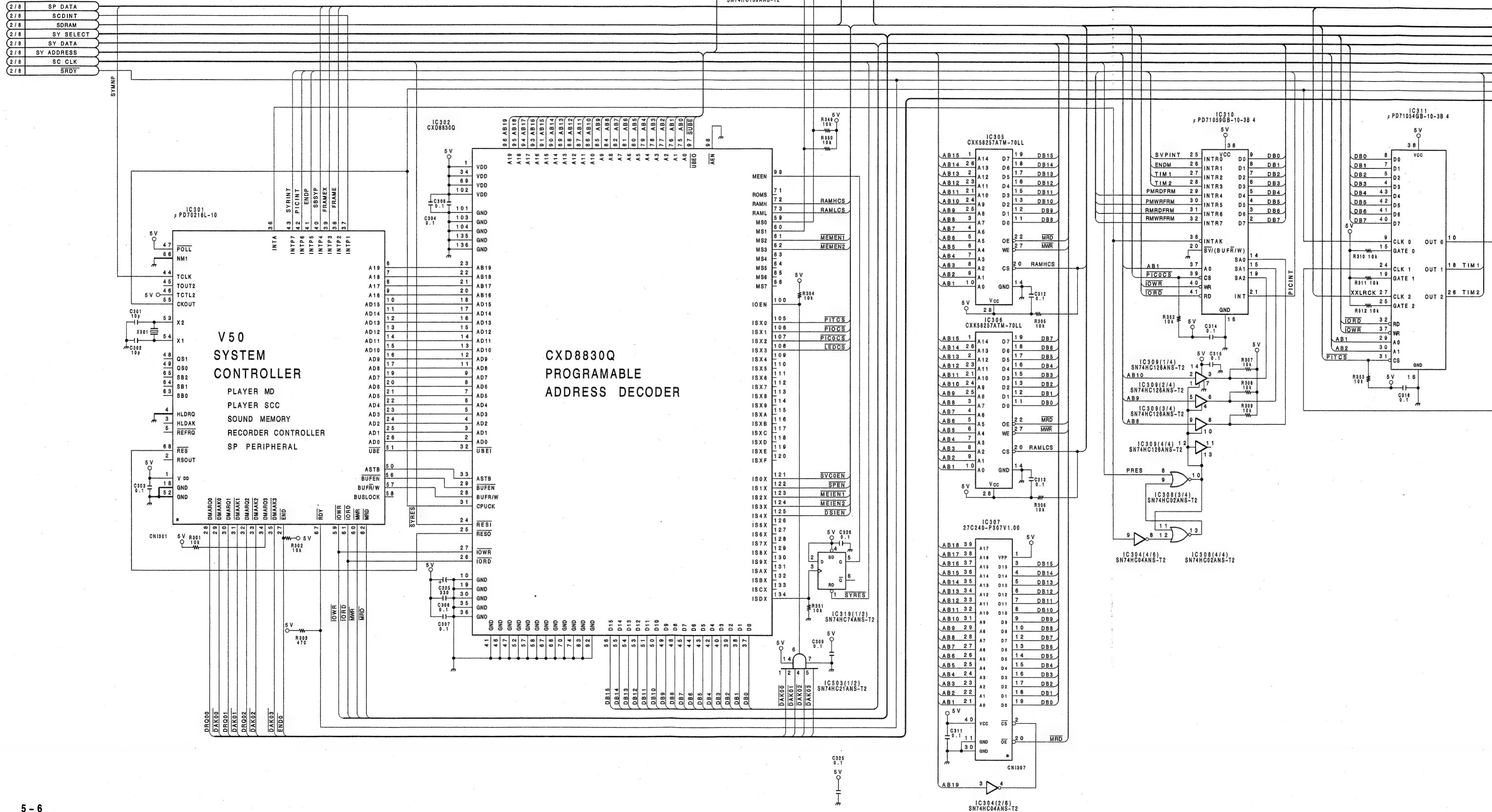
SSP-8 BOARD (2 / 8)
System Control, Signal Processor

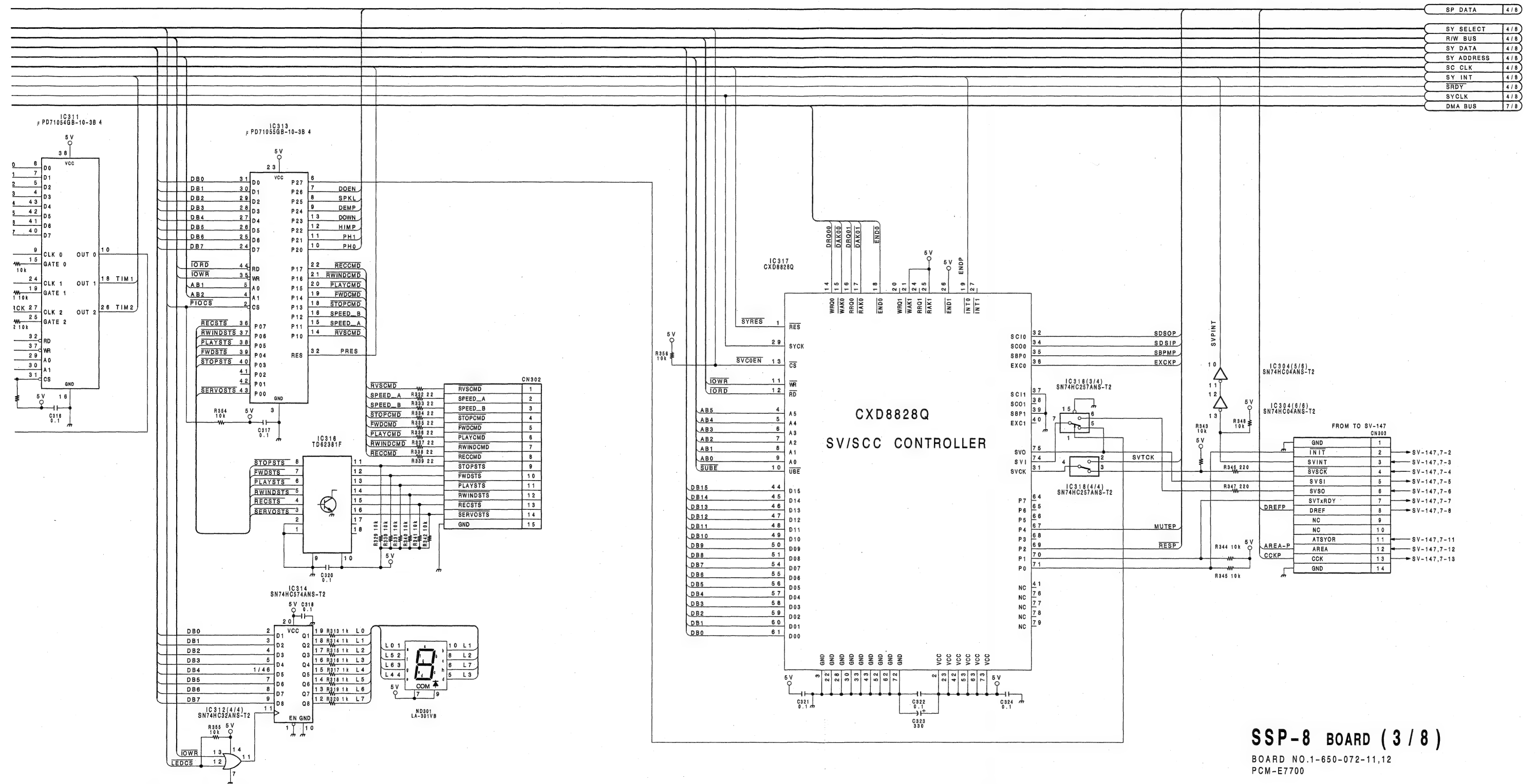




SSP-8 BOARD (3/8)
System Control, Signal Processor



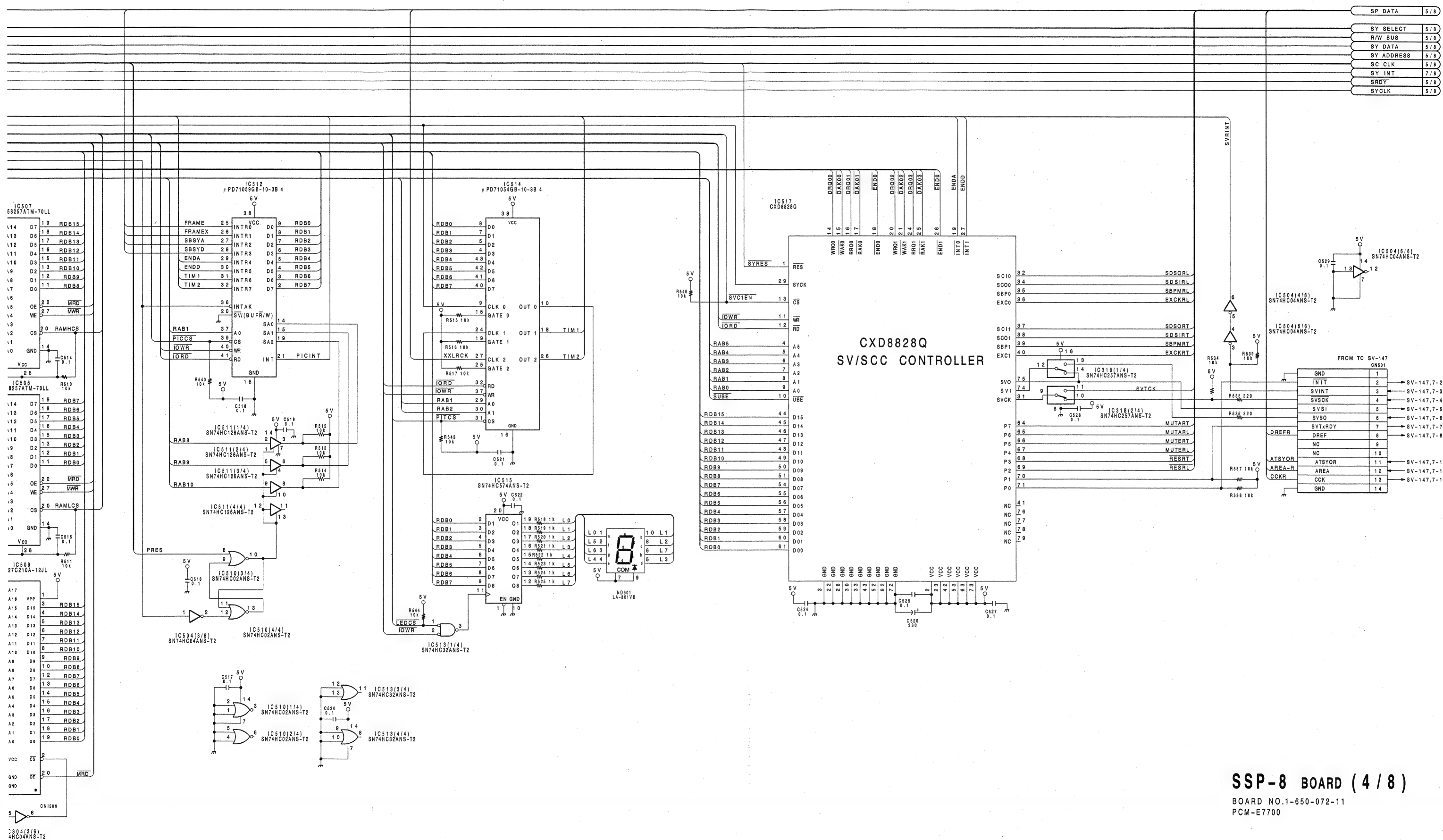
SSP-8 BOARD (3/8)
System Control, Signal Processor



3/8	SP DATA
3/8	SY SELECT
3/8	R/W BUS
3/8	SY DATA
3/8	SY ADDRESS
3/8	SC CLK
3/8	SY INT
3/8	SRDY
3/8	SYCLK

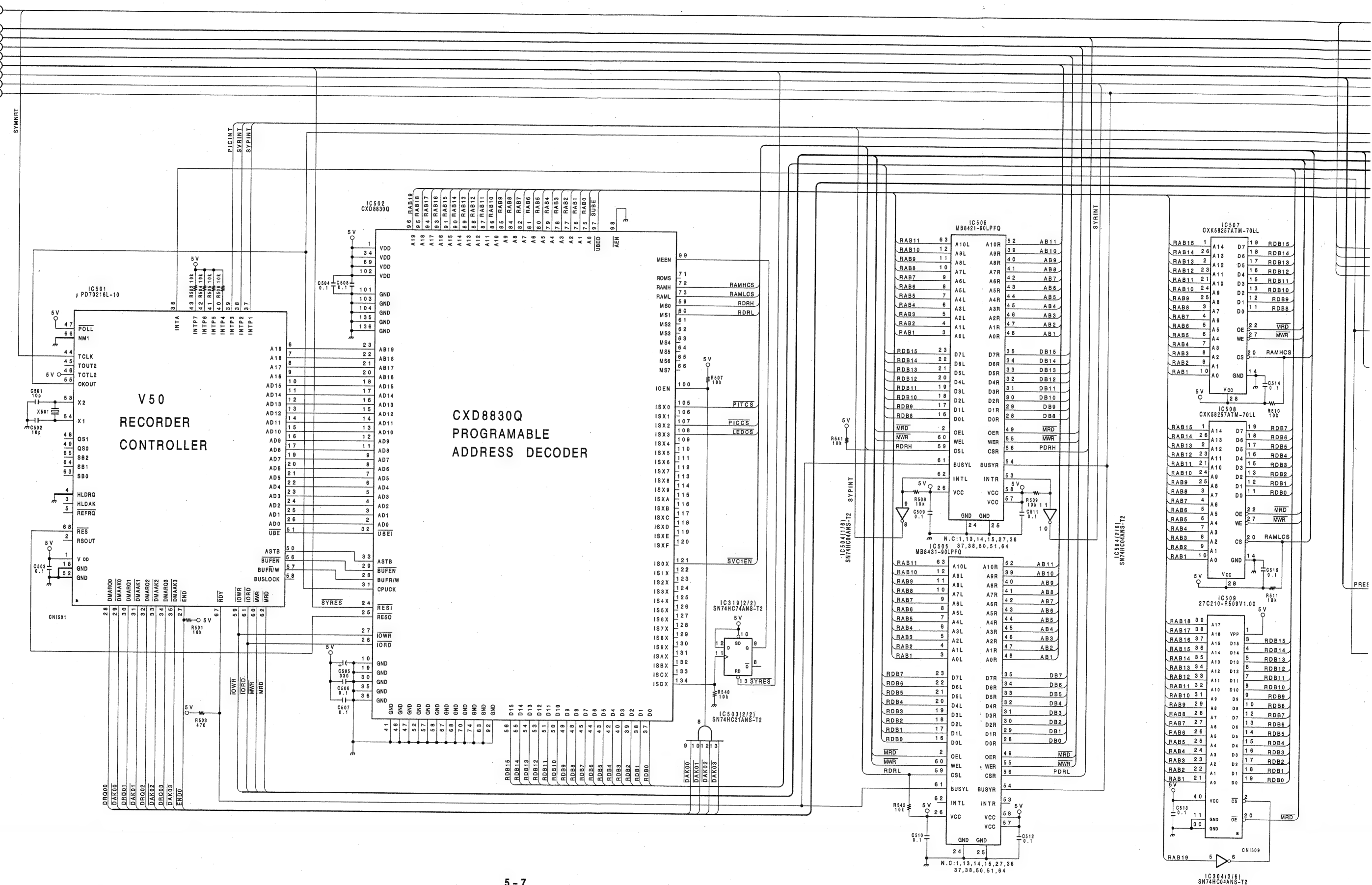


H



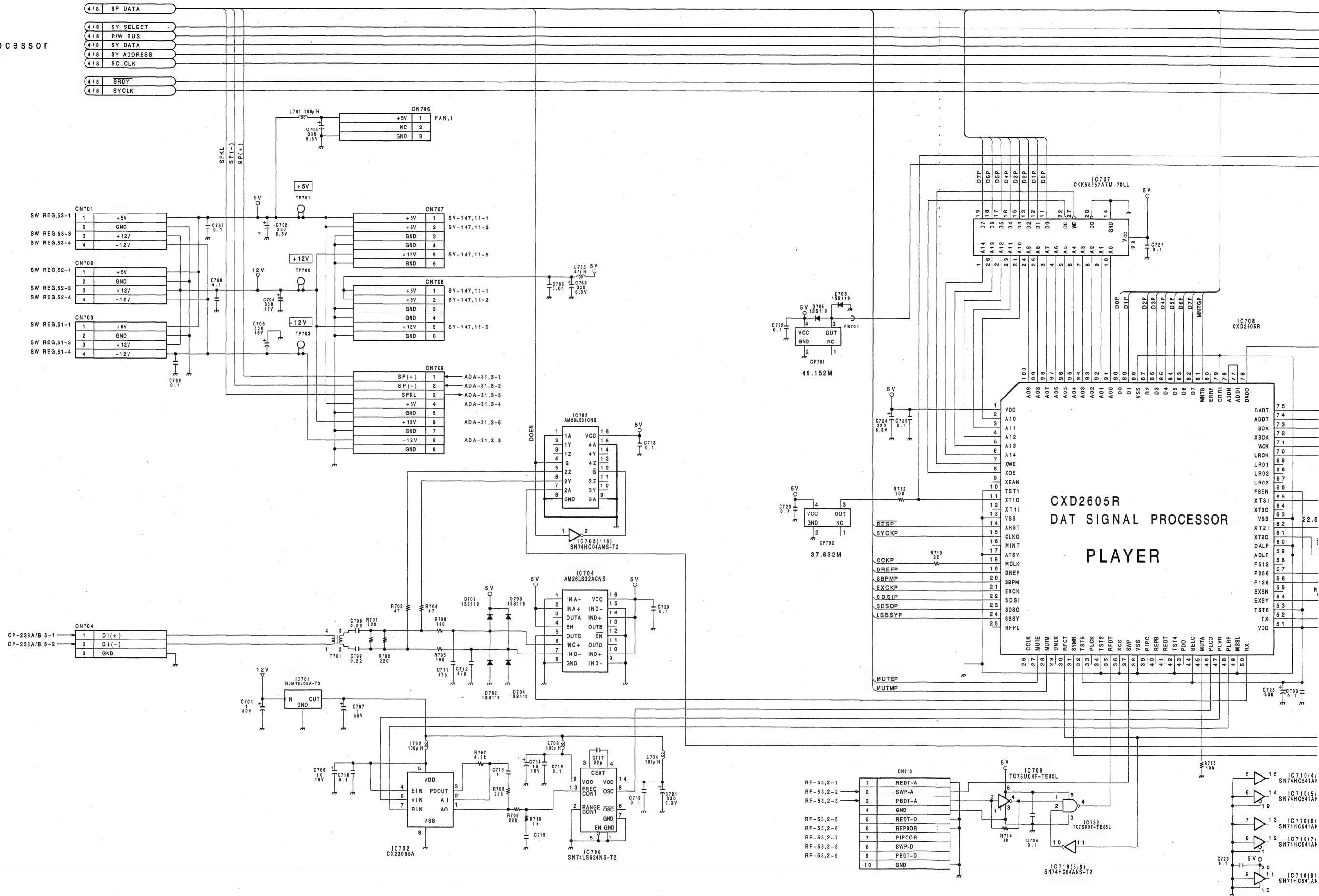
SSP-8 BOARD (4/8)
System Control, Signal Processor

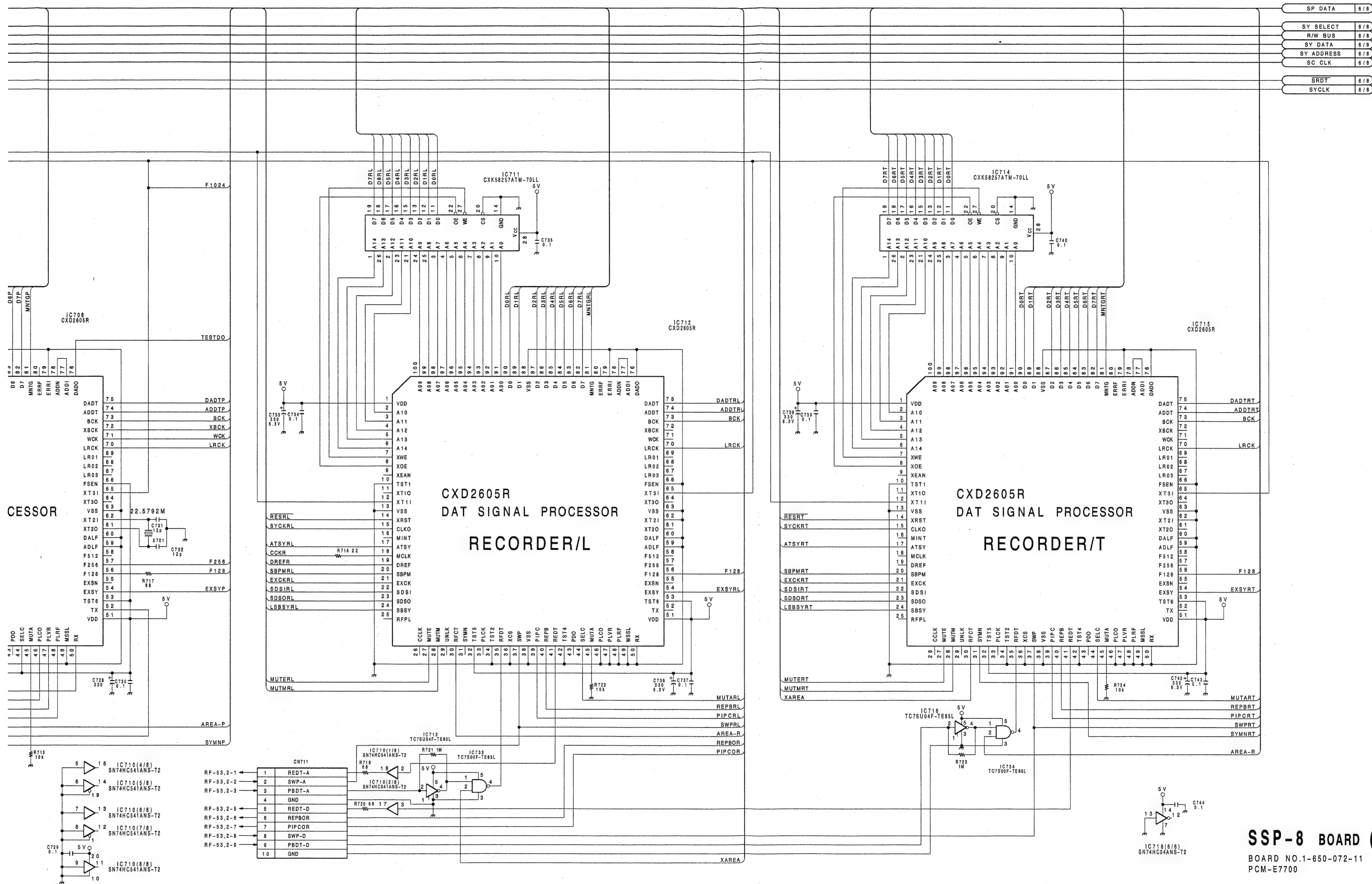
3/8	SP DATA
3/8	SY SELECT
3/8	R/W BUS
3/8	SY DATA
3/8	SY ADDRESS
3/8	SC CLK
3/8	SY INT
3/8	SRDY
3/8	SYCLK





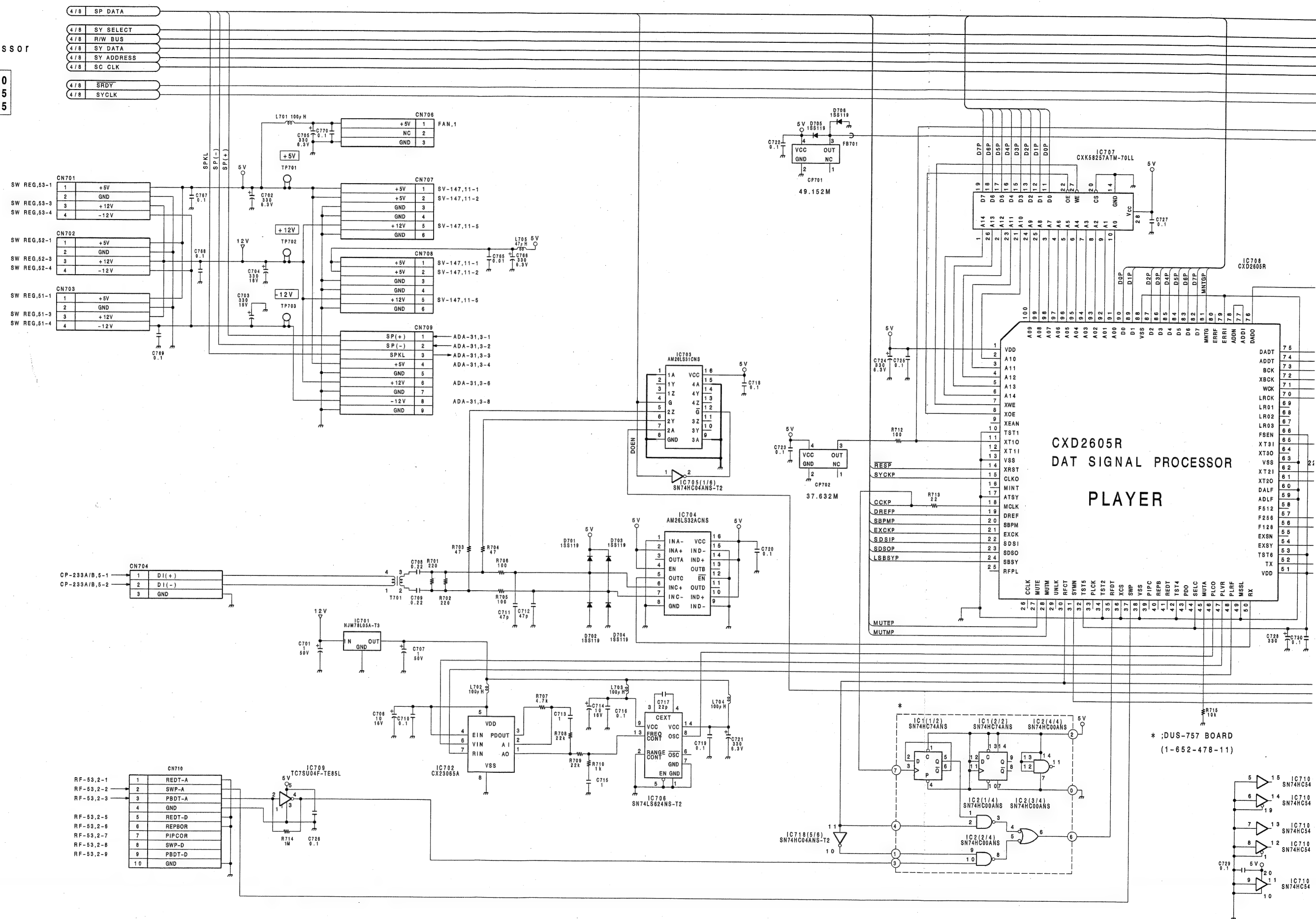
SSP-8 BOARD (5/8)
System Control, Signal Processor



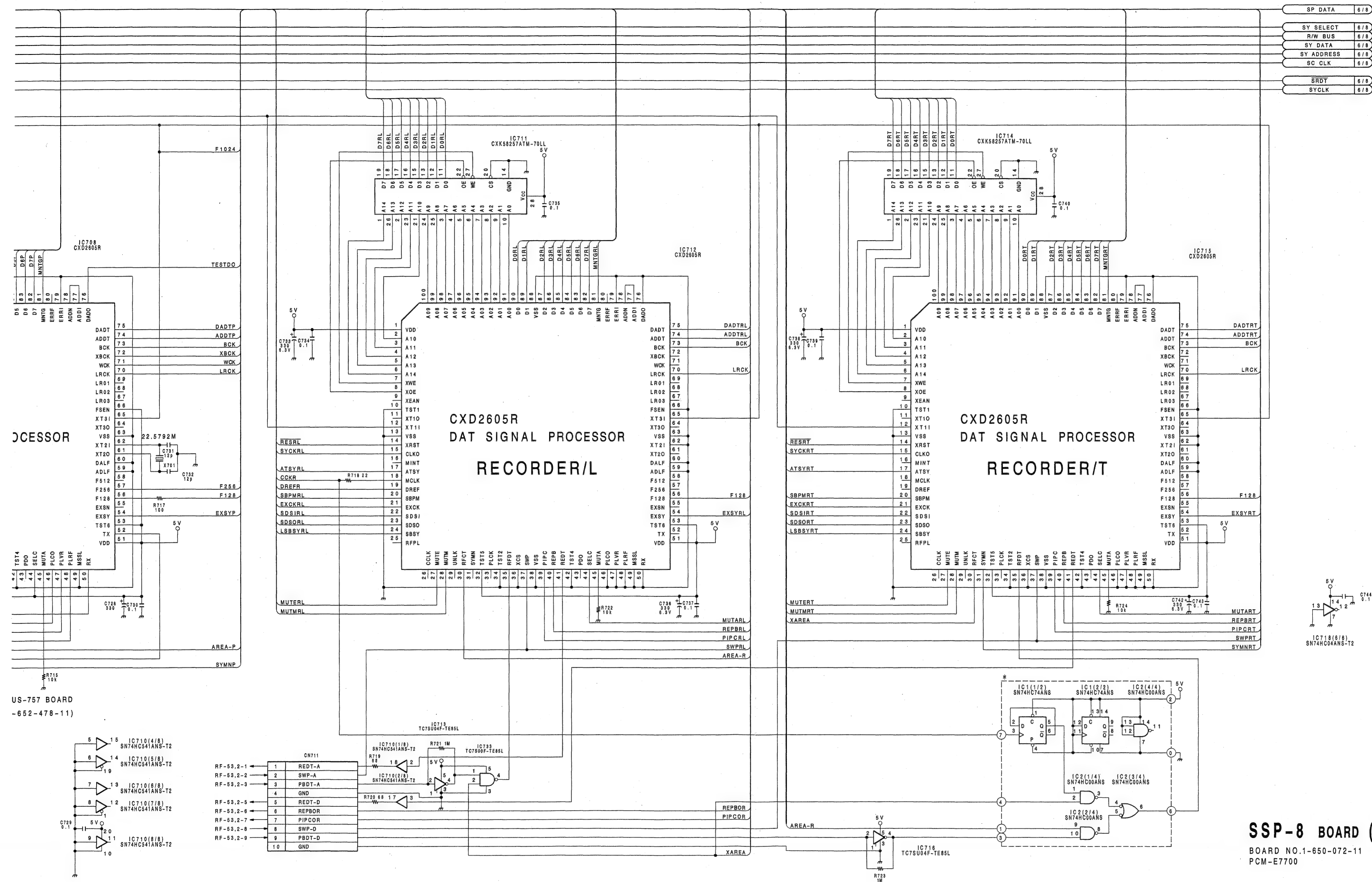


SSP-8 BOARD (5/8)
System Control, Signal Processor

Serial No. J ; 10001 to 10110
UC ; 20001 to 20055
EK ; 50001 to 50235



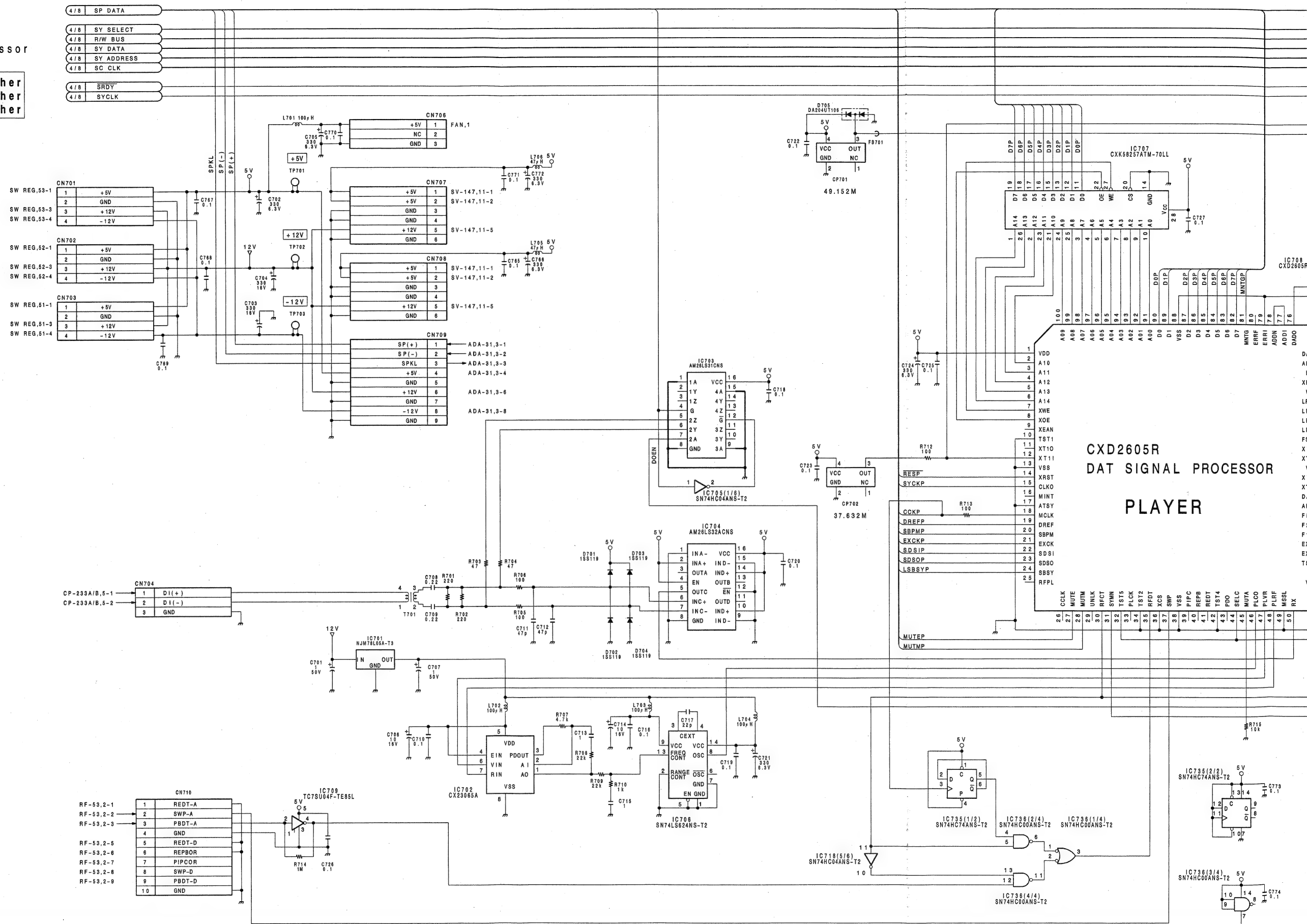
* :DUS-757 BOARD
(1-652-478-11)

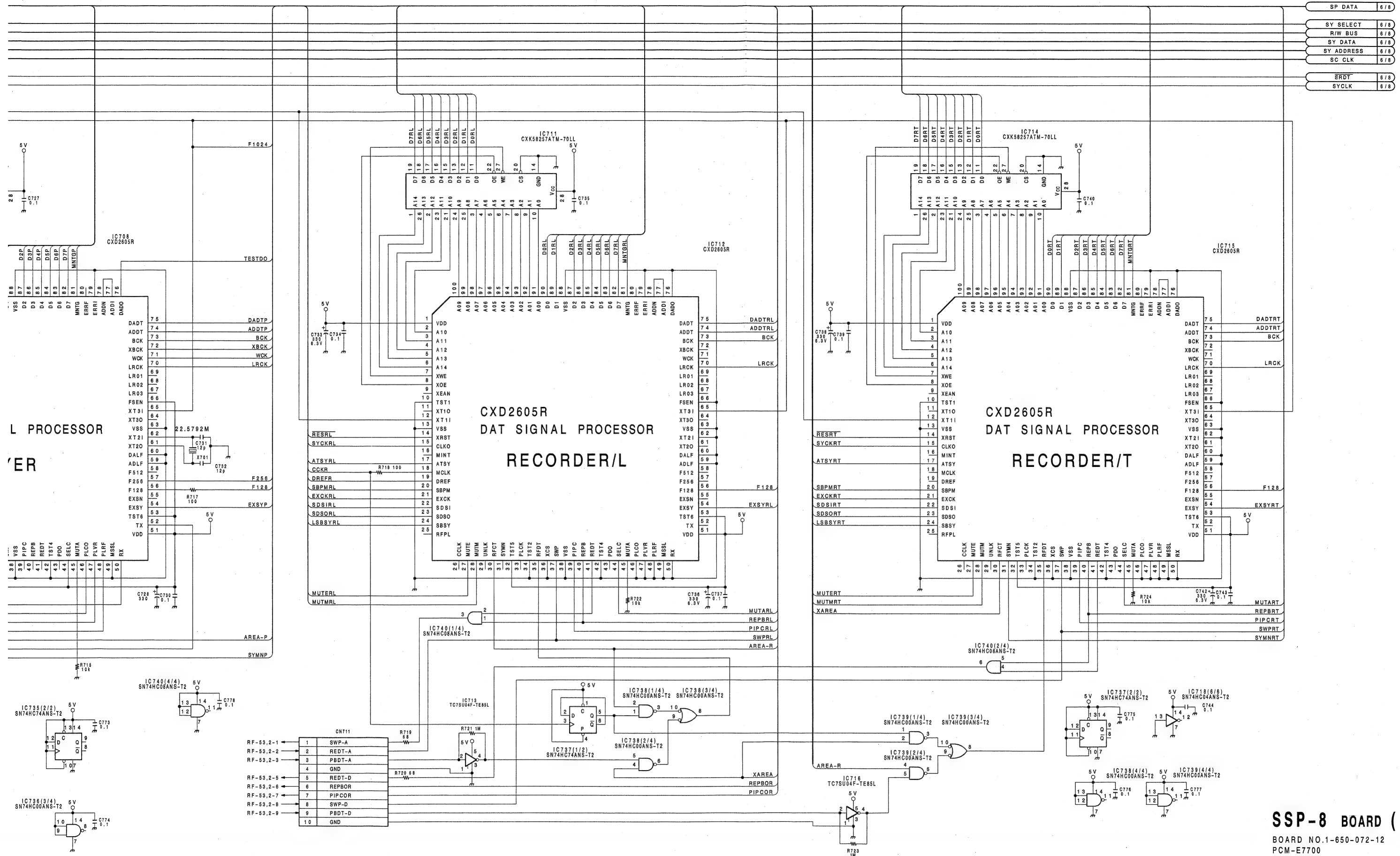


SSP-8 BOARD (5 / 8)

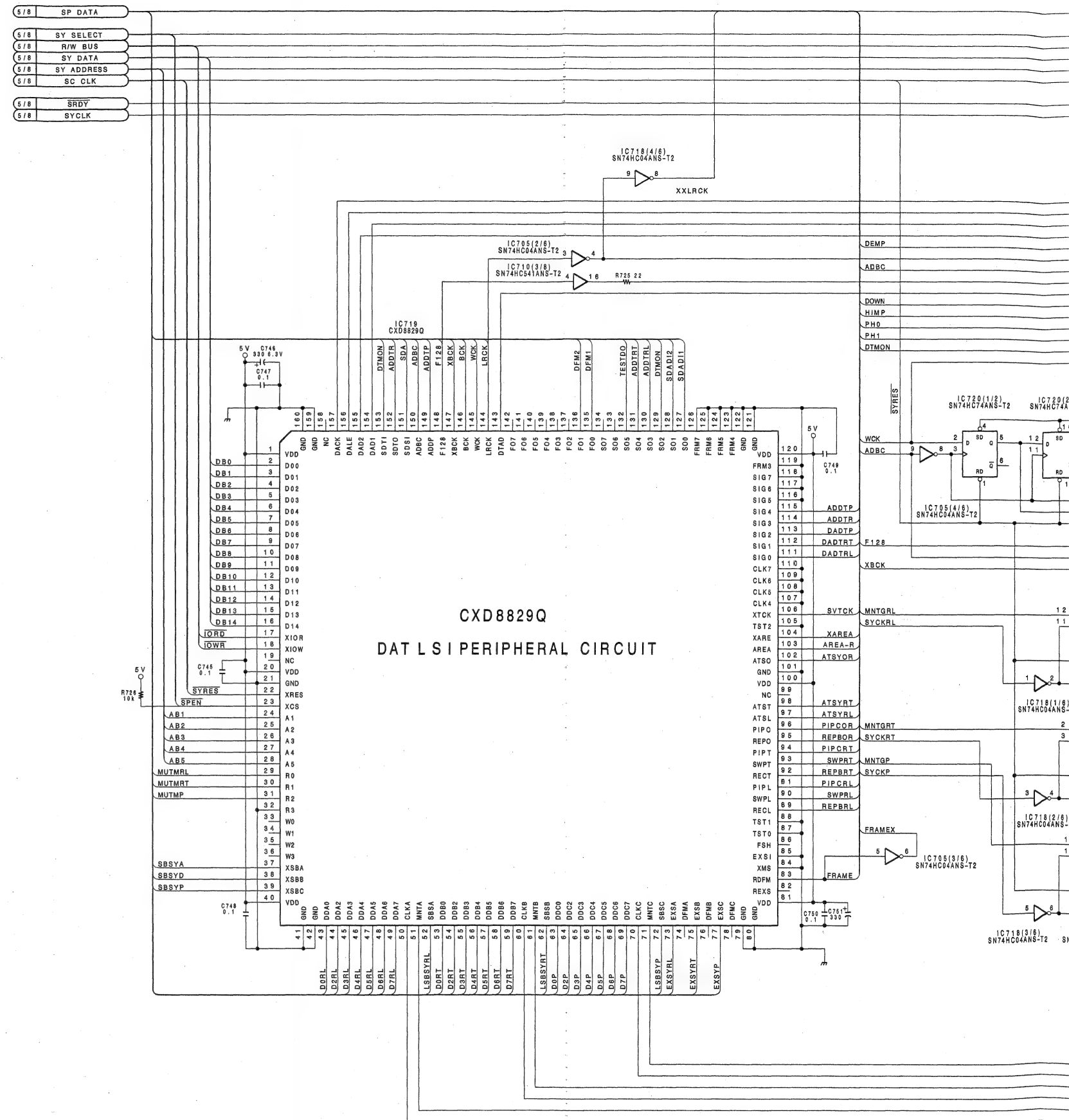
System Control, Signal Processor

Serial No. J ; 10111 and higher
UC ; 20056 and higher
EK ; 50236 and higher





SSP-8 BOARD (6/8)
System Control, Signal Processor



SP DATA	7/8
SY SELECT	7/8
R/W BUS	7/8
SY DATA	7/8
SY ADDRESS	7/8
SC CLK	7/8
SRDY	7/8
SYCLK	7/8

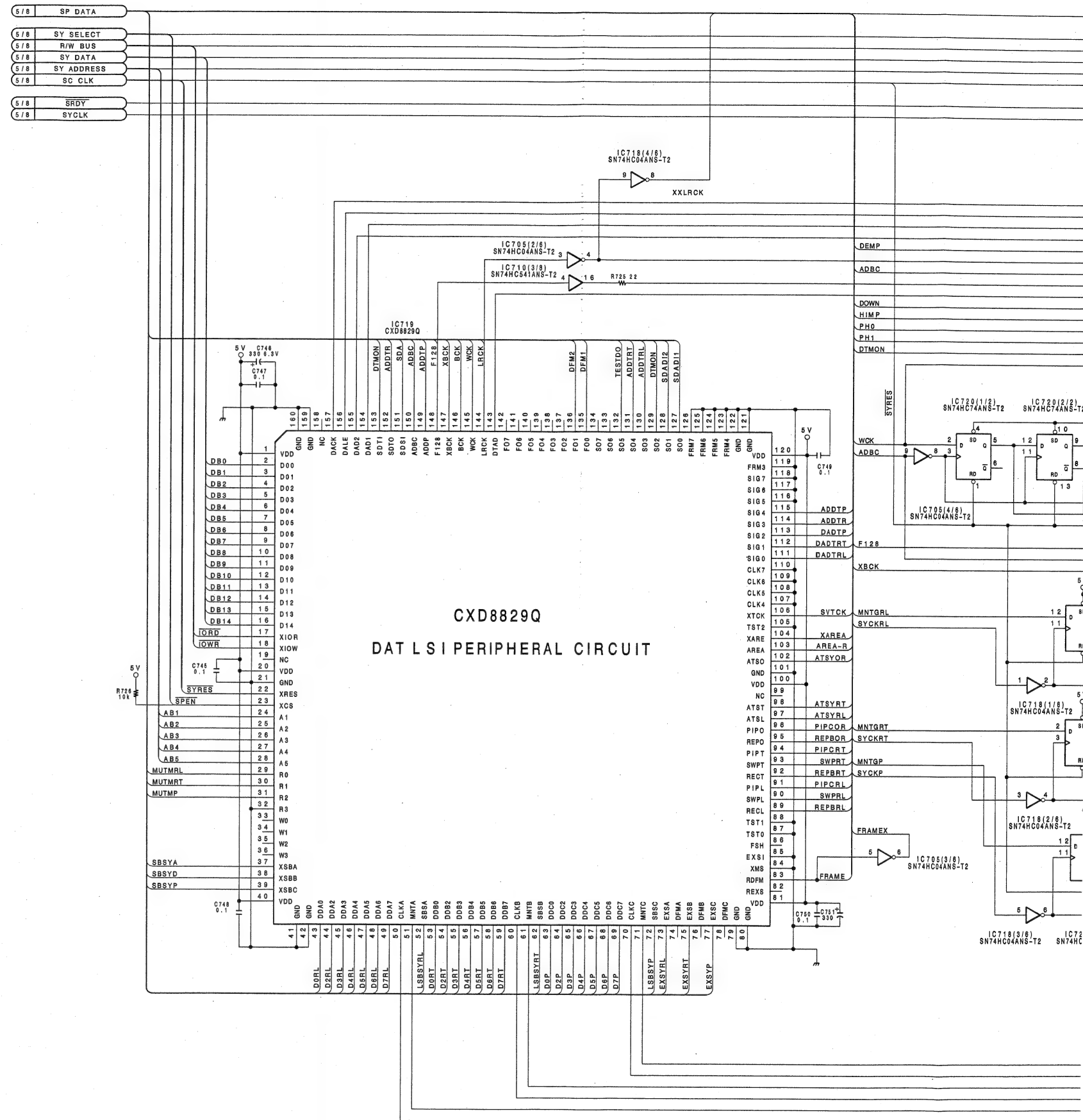
CN12	
DACK	1
DALE	2
DAD1	3
DAD2	4
DAMP	5
XLCK	6
ADBC	7
F128	8
DTAD	9
DOWN	10
HIMP	11
PH0	12
PH1	13
GND	14
GND	15

SSP-8 BOARD (6/8)

BOARD NO.1-650-072-11
PCM-E7700

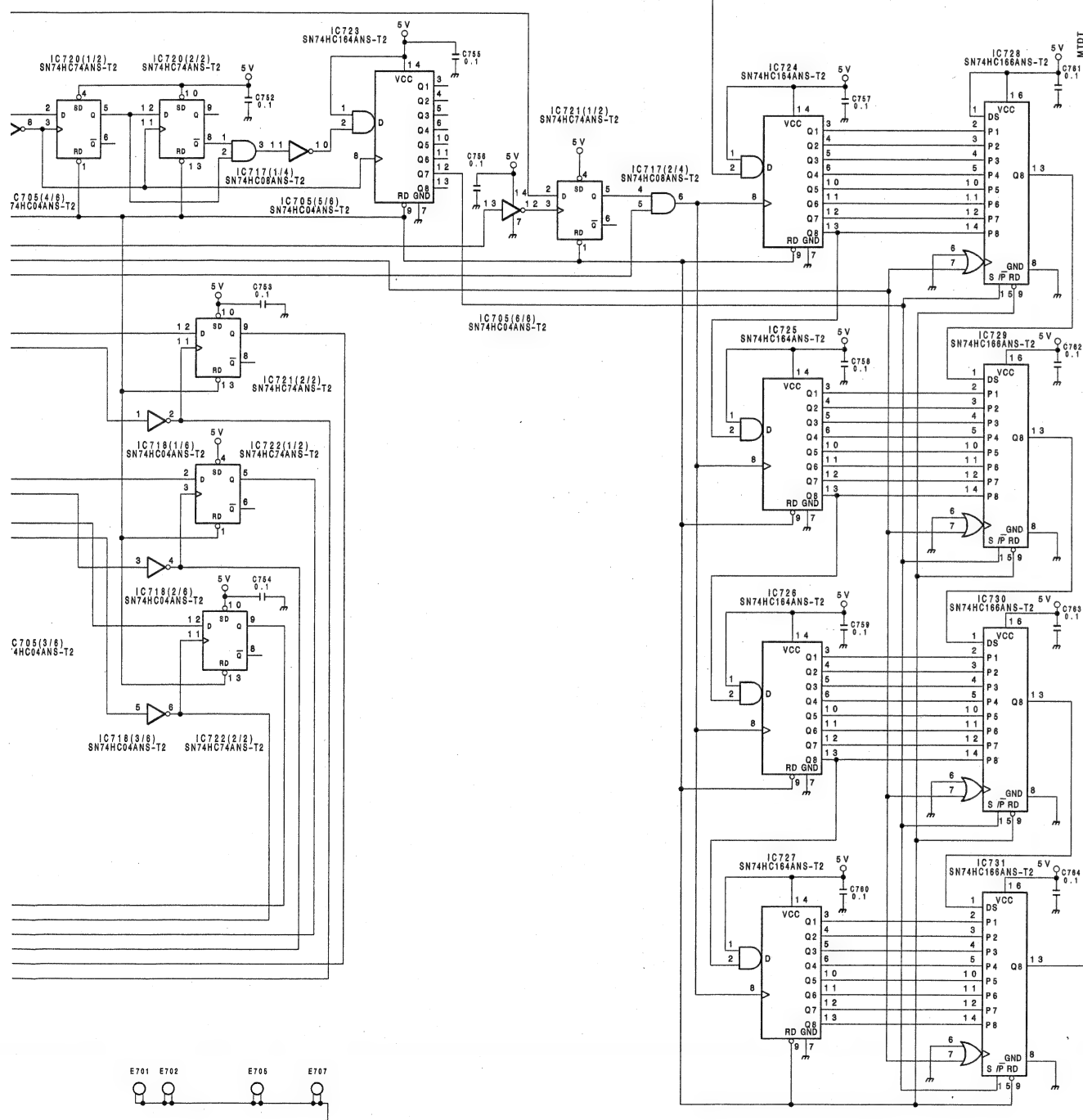
SSP-8 BOARD (6/8)
System Control, Signal Processor

Serial No. J ; 10001 to 10110
UC ; 20001 to 20055
EK ; 50001 to 50235



SP DATA	7/8
SY SELECT	7/8
R/W BUS	7/8
SY DATA	7/8
SY ADDRESS	7/8
SC CLK	7/8
SRDY	7/8
SYCLK	7/8

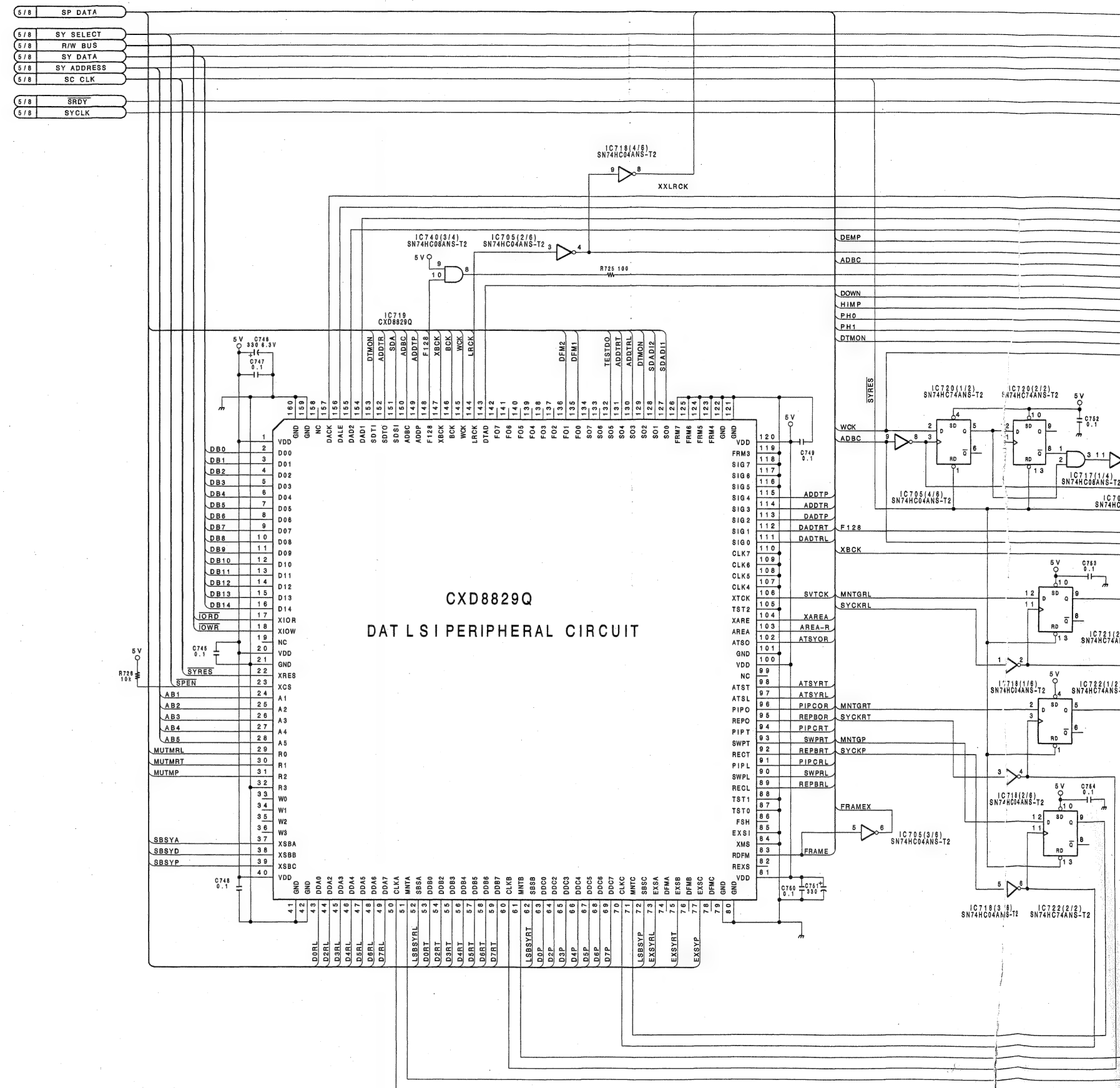
CN712	
DACK	1
DALE	2
DAD1	3
DAD2	4
DAMP	5
XLCK	6
ADBC	7
F128	8
DTAD	9
DOWN	10
HIMP	11
PH0	12
PH1	13
GND	14
GND	15



SSP-8 BOARD (6/8)
BOARD NO.1-650-072-11
PCM-E7700

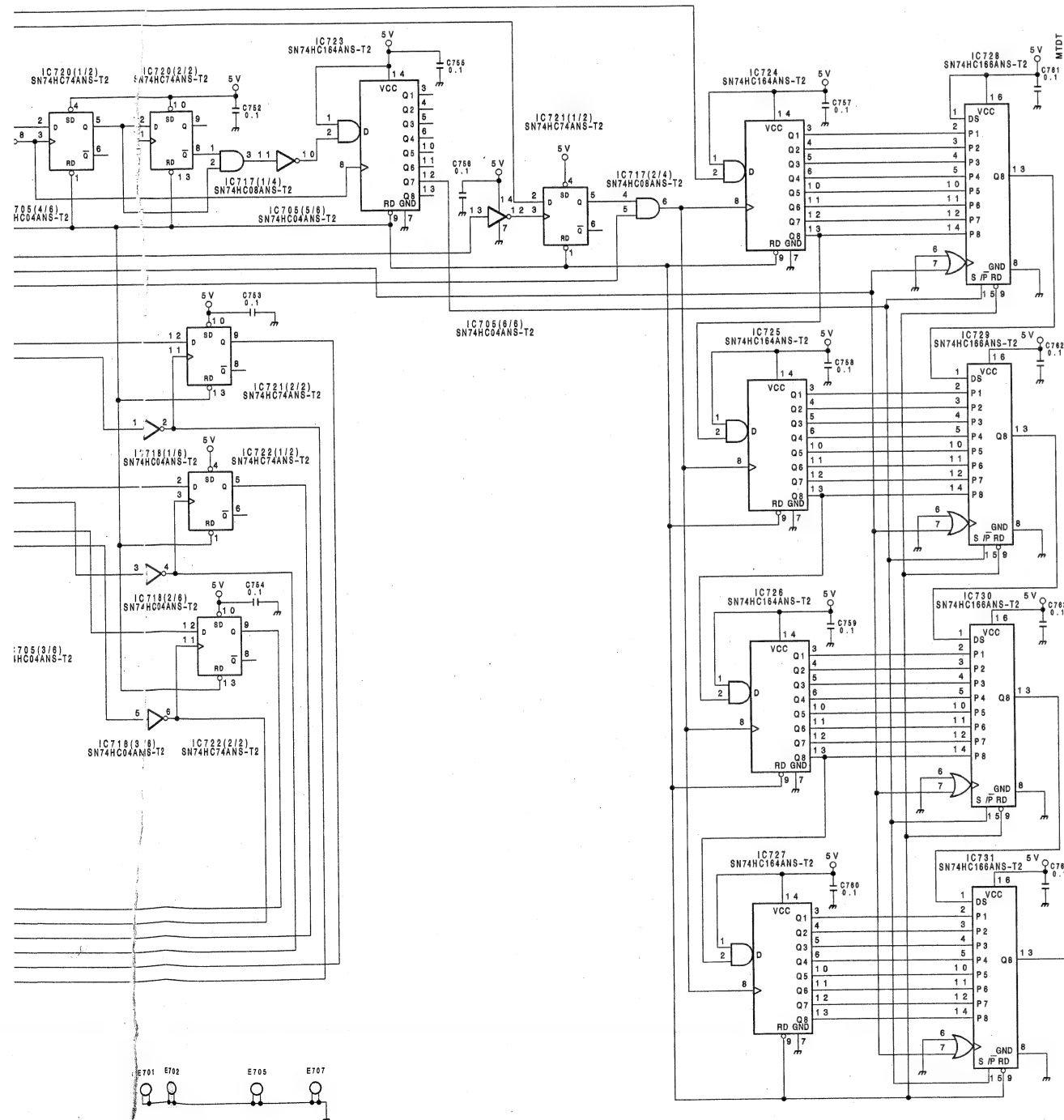
SSP-8 BOARD (6 / 8)
System Control, Signal Processor

Serial No. J ;10111 and higher UC;20056 and higher EK;50236 and higher
--



SP DATA	7/8
SY SELECT	7/8
R/W BUS	7/8
SY DATA	7/8
SY ADDRESS	7/8
SC CLK	7/8
SRDY	7/8
SYCLK	7/8

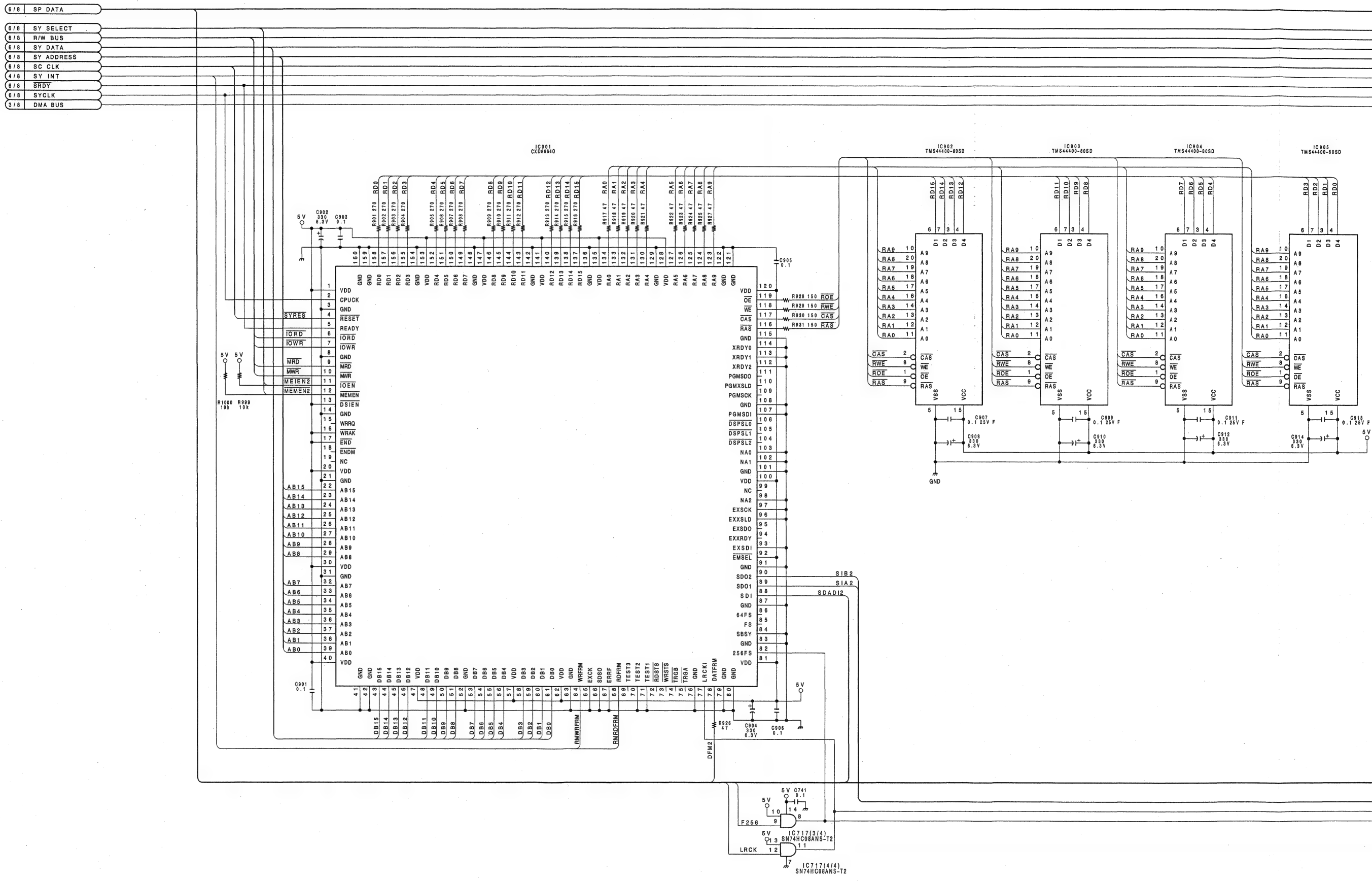
CN712	
DACK	1
DALE	2
DAD1	3
DAD2	4
DAMP	5
XLCK	6
ADBC	7
F128	8
DTAD	9
DOWN	10
HIMP	11
PH0	12
PH1	13
GND	14
GND	15



SSP-8 BOARD (6/8)

BOARD NO.1-650-072-12
PCM-E7700

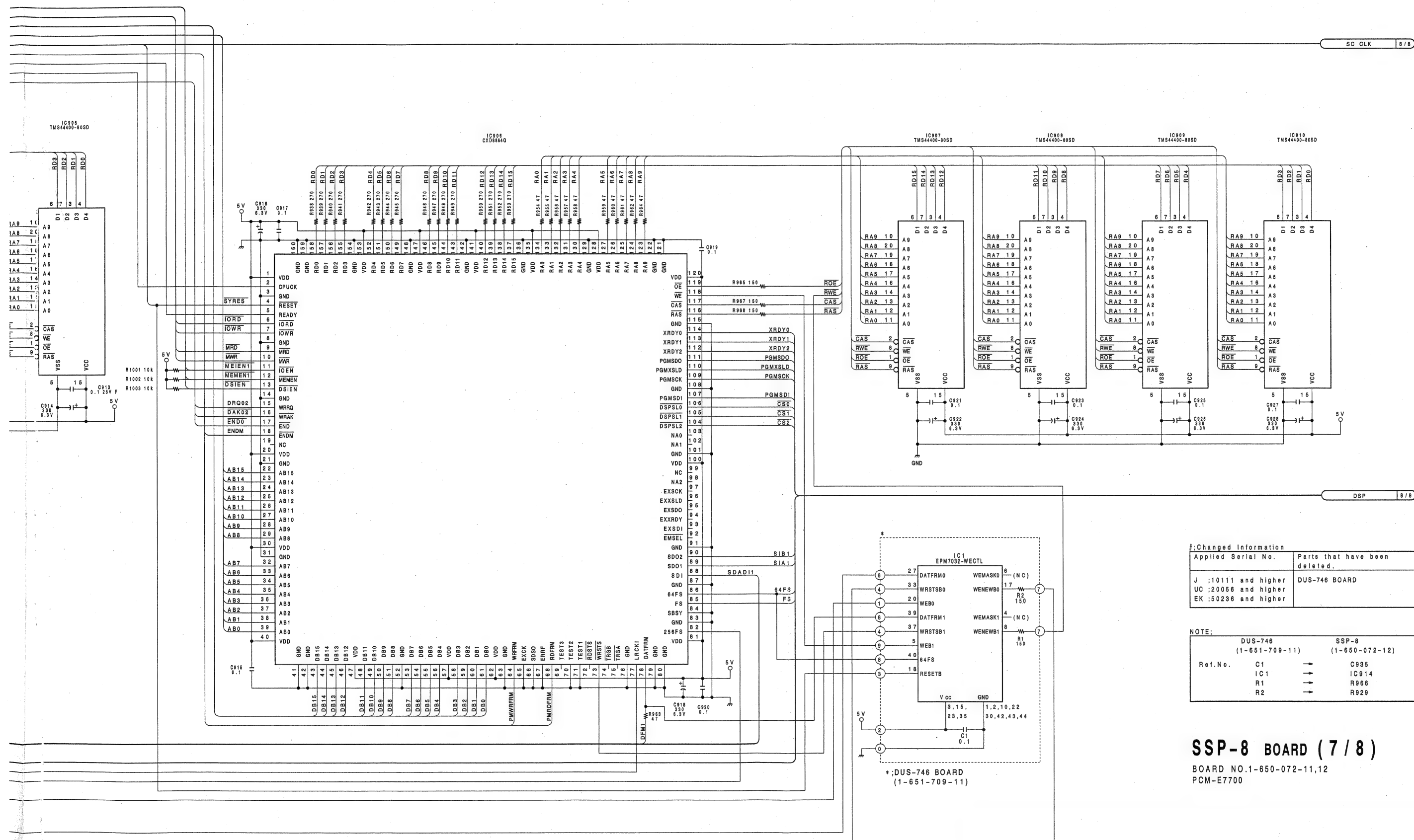
SSP-8 BOARD (7/8)
System Control,Signal Processor





BOARD NO.1-650-072-11
PCM-E7700

H



#; Changed Information

Applied Serial No.	Parts that have been deleted.
J :10111 and higher UC :20056 and higher EK :50236 and higher	DUS-746 BOARD

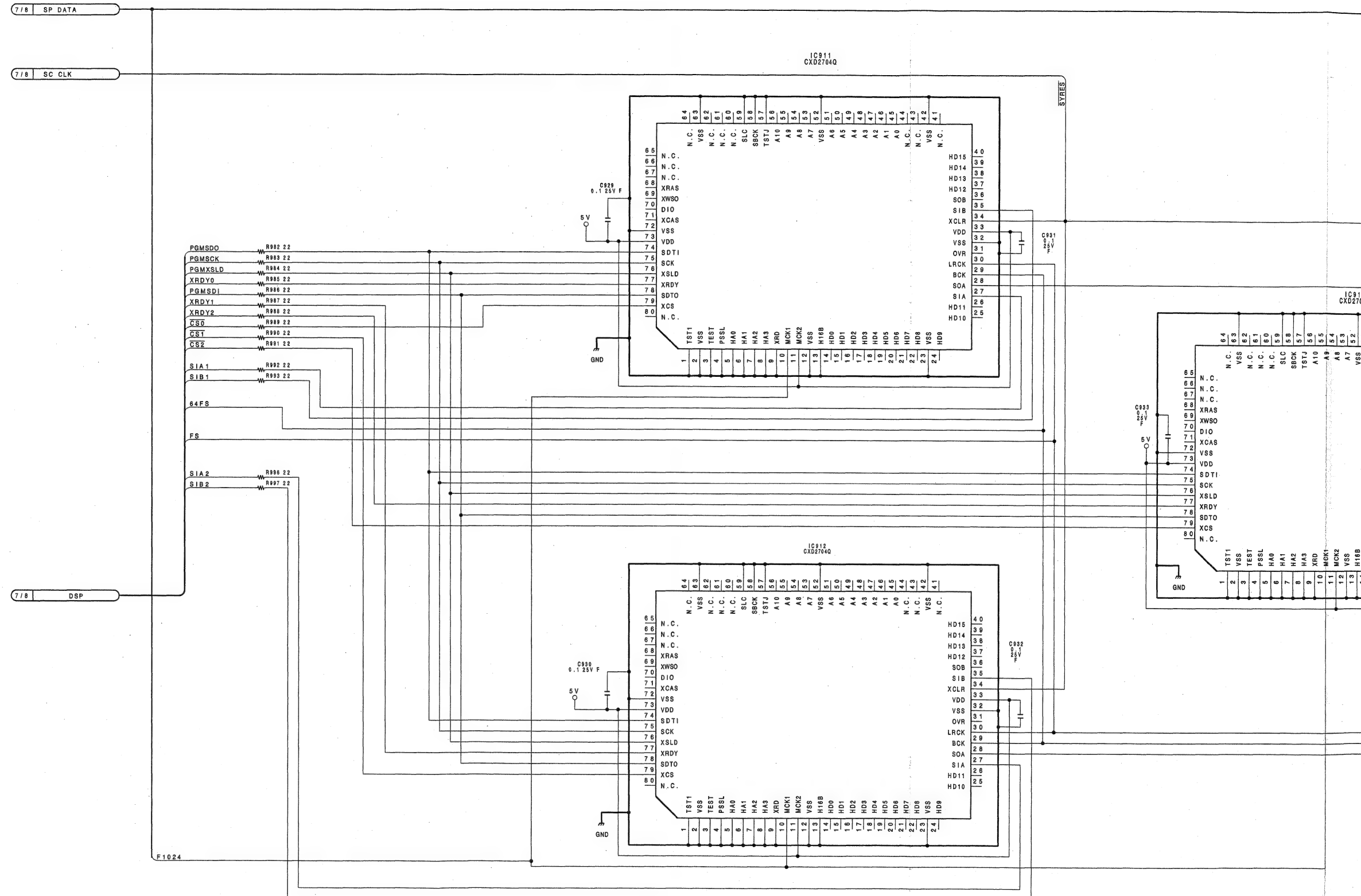
NOTE:

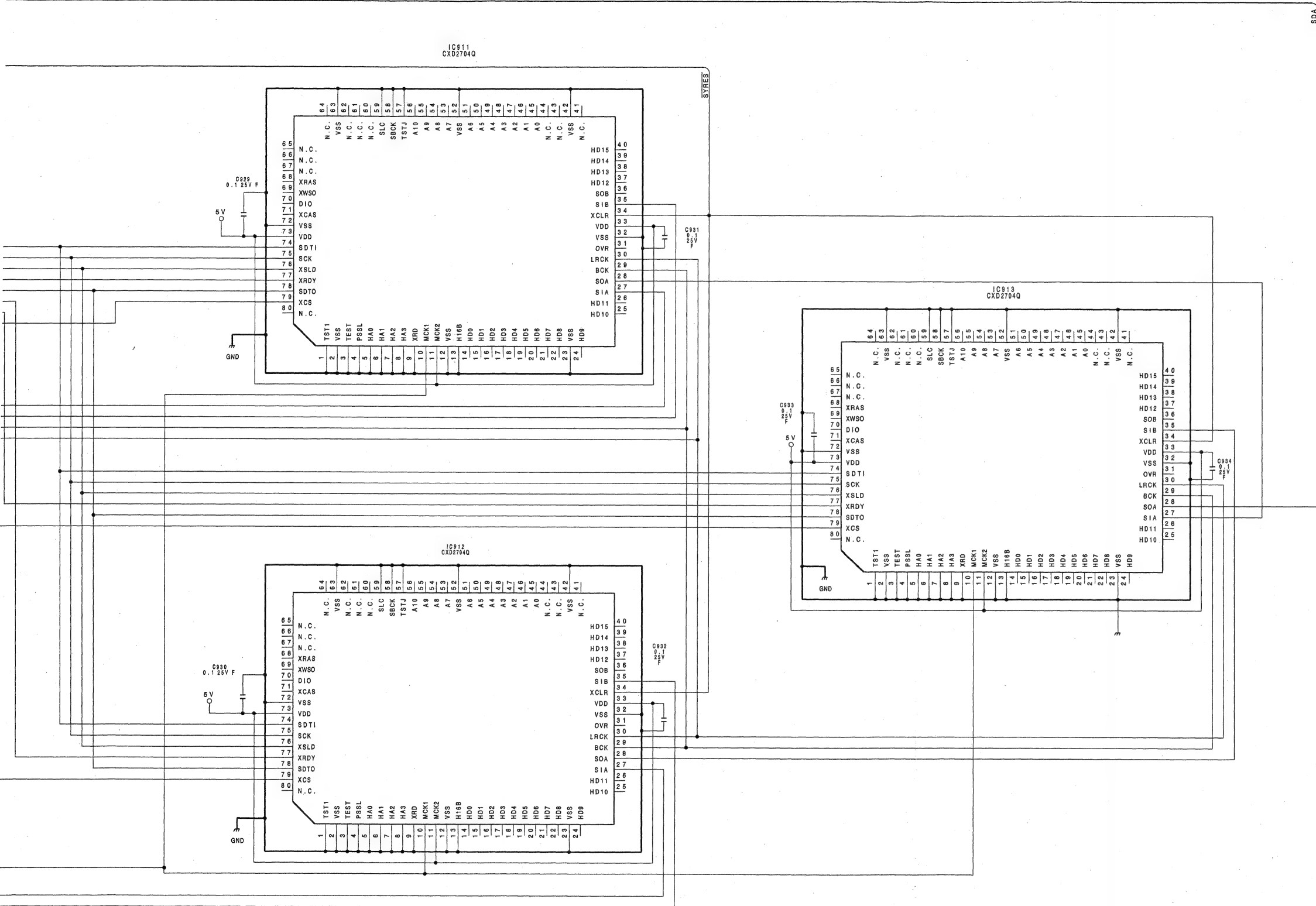
DUS-746 (1-651-709-11)		SSP-8 (1-650-072-12)	
Ref. No.	C1	→	C935
	IC1	→	IC914
	R1	→	R966
	R2	→	R929

SSP-8 BOARD (7 / 8)

BOARD NO.1-650-072-11,12
PCM-E7700

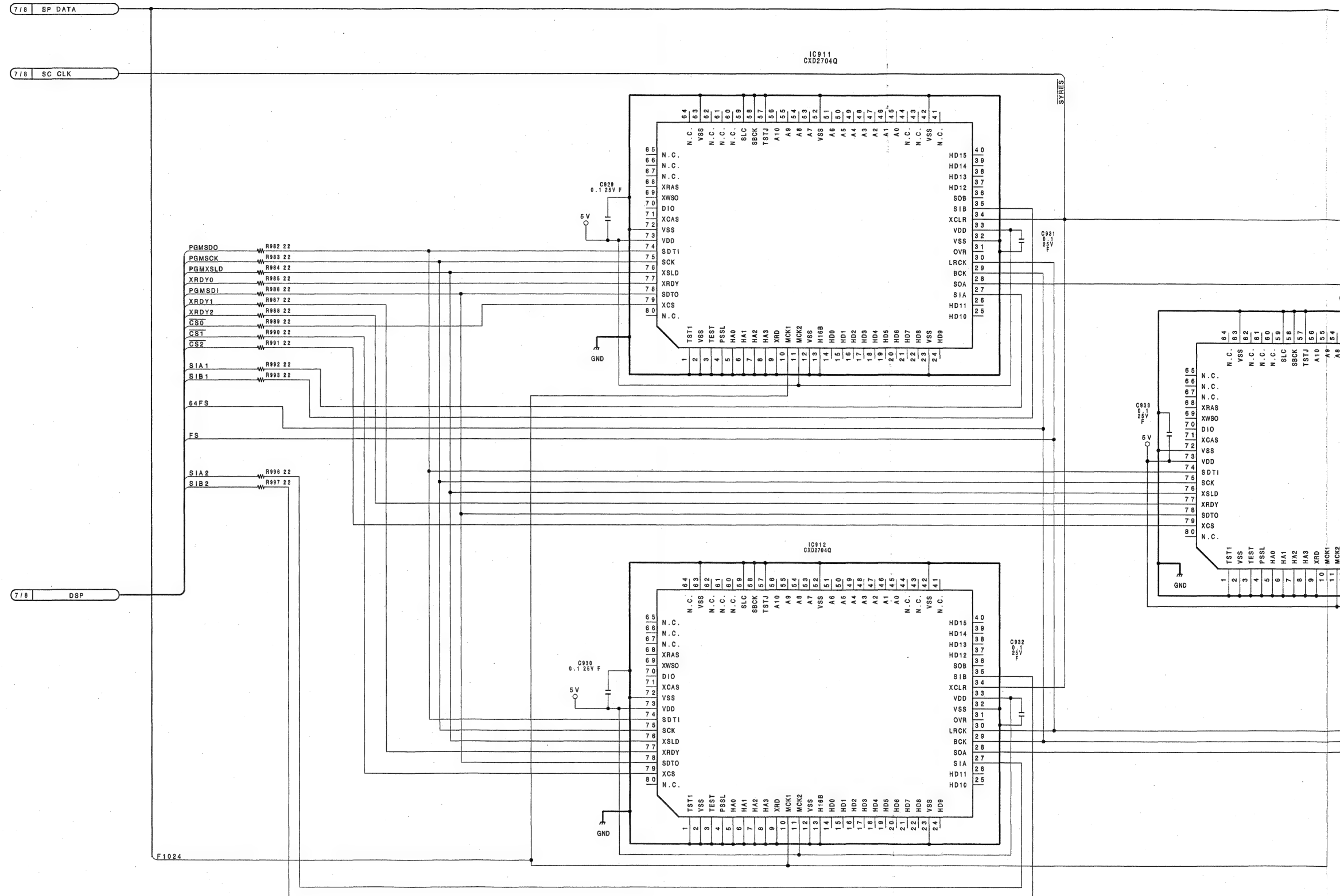
SSP-8 BOARD (8/8)
System Control, Signal Processor

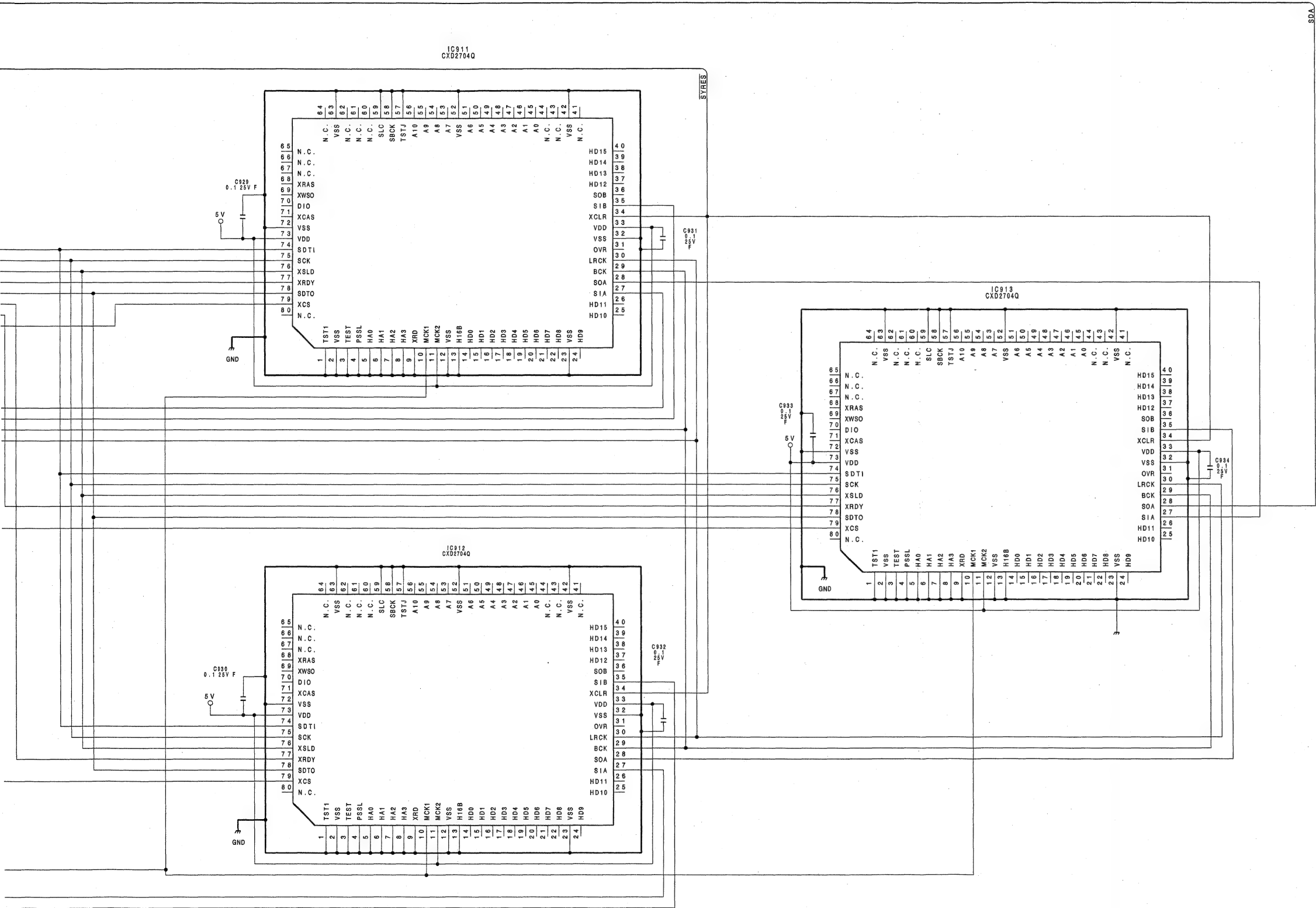




SSP-8 BOARD (8 / 8)
BOARD NO.1-650-072-11
PCM-E7700

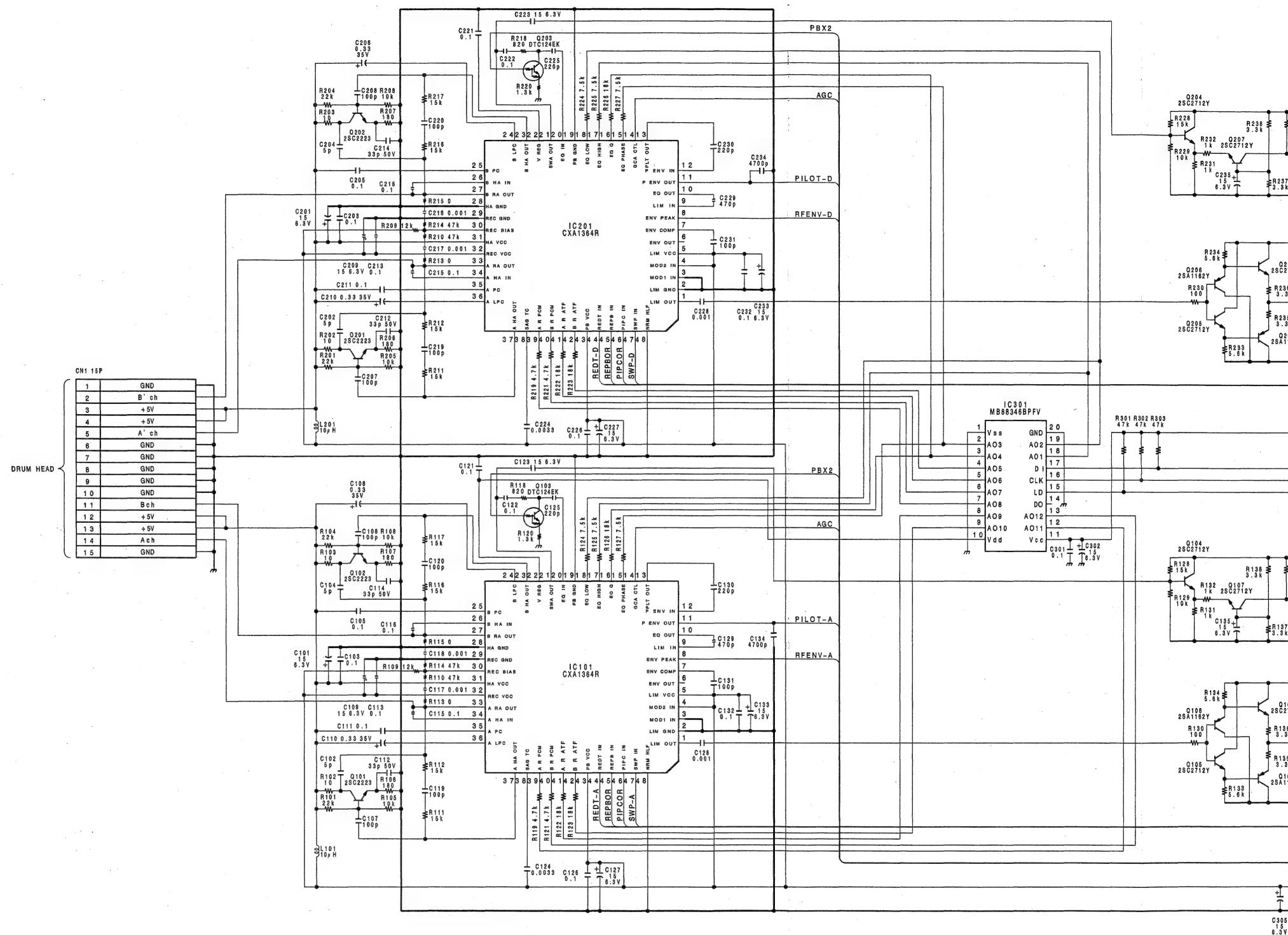
SSP-8 BOARD (8/8)
System Control, Signal Processor

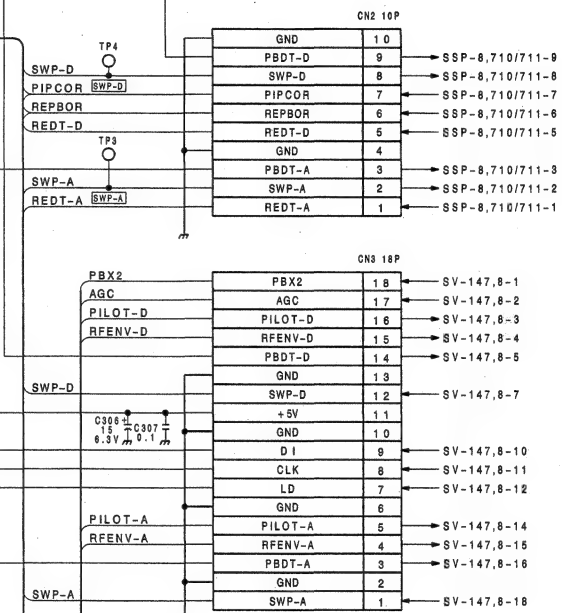
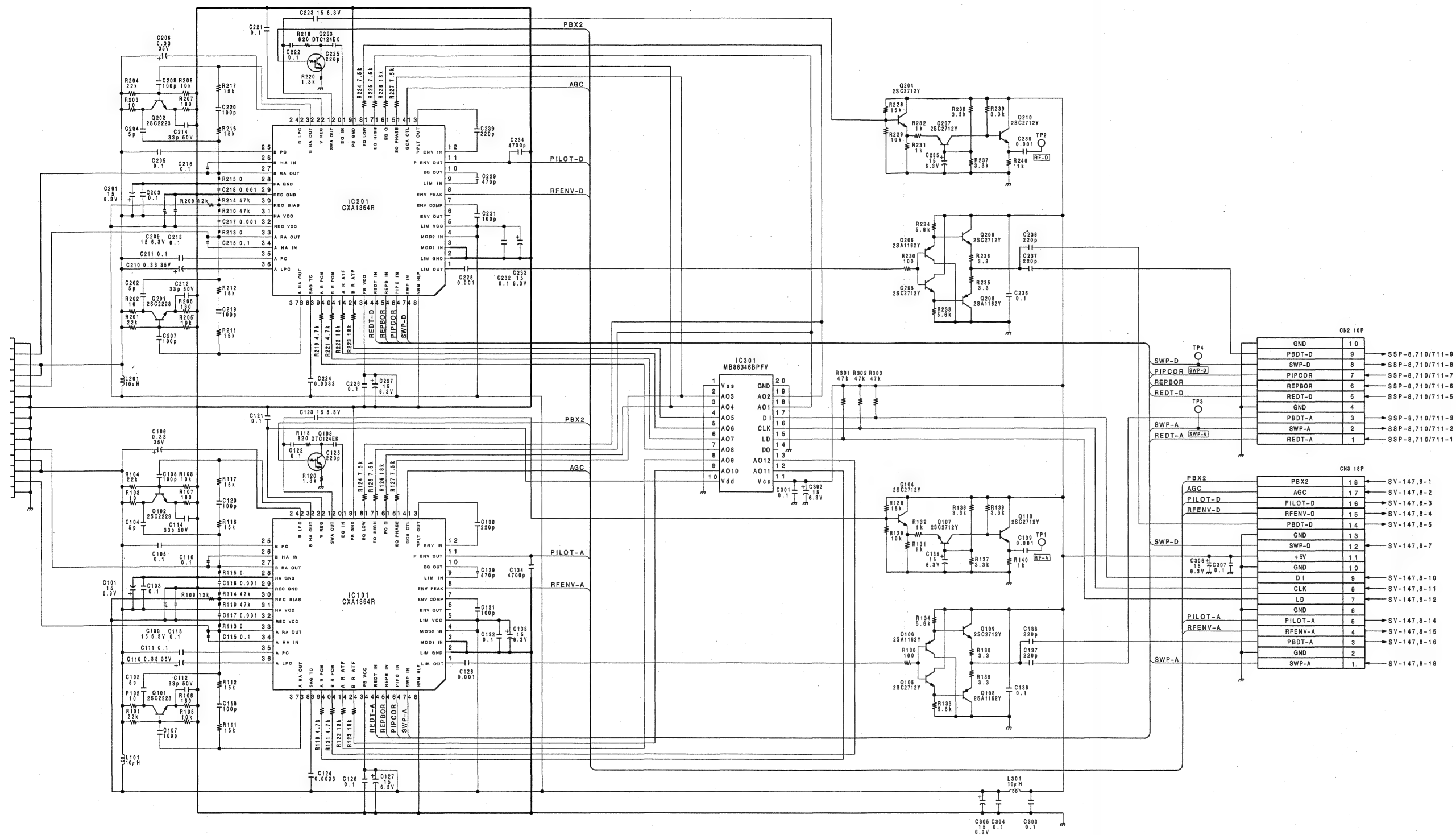




SSP-8 BOARD (8 / 8)
BOARD NO.1-650-072-11,12
PCM-E7700

RF-53 BOARD
RF Amplifier

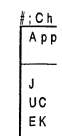


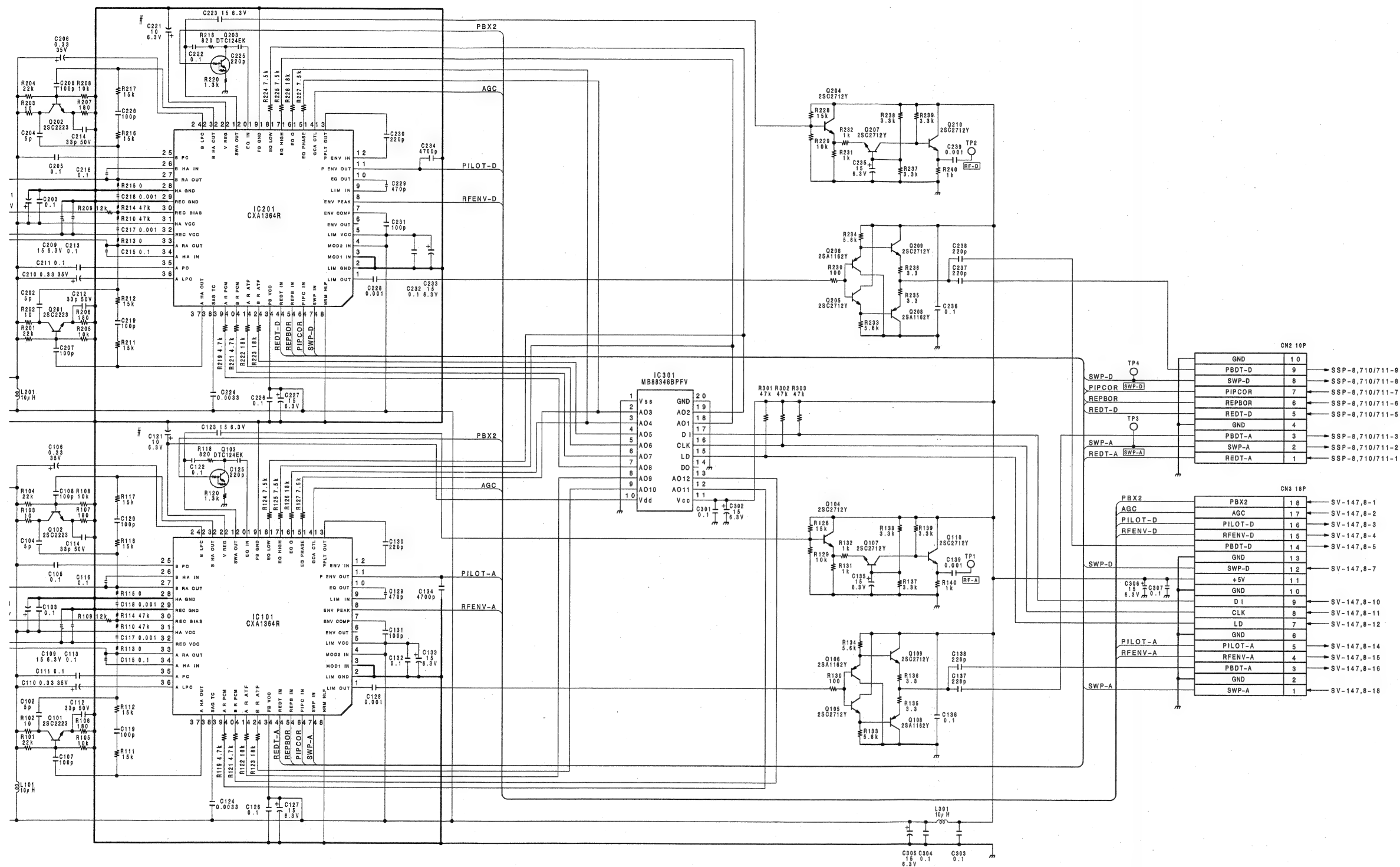
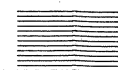


RF-53 BOARD

BOARD NO.1-650-046-11
PCM-E7700

5



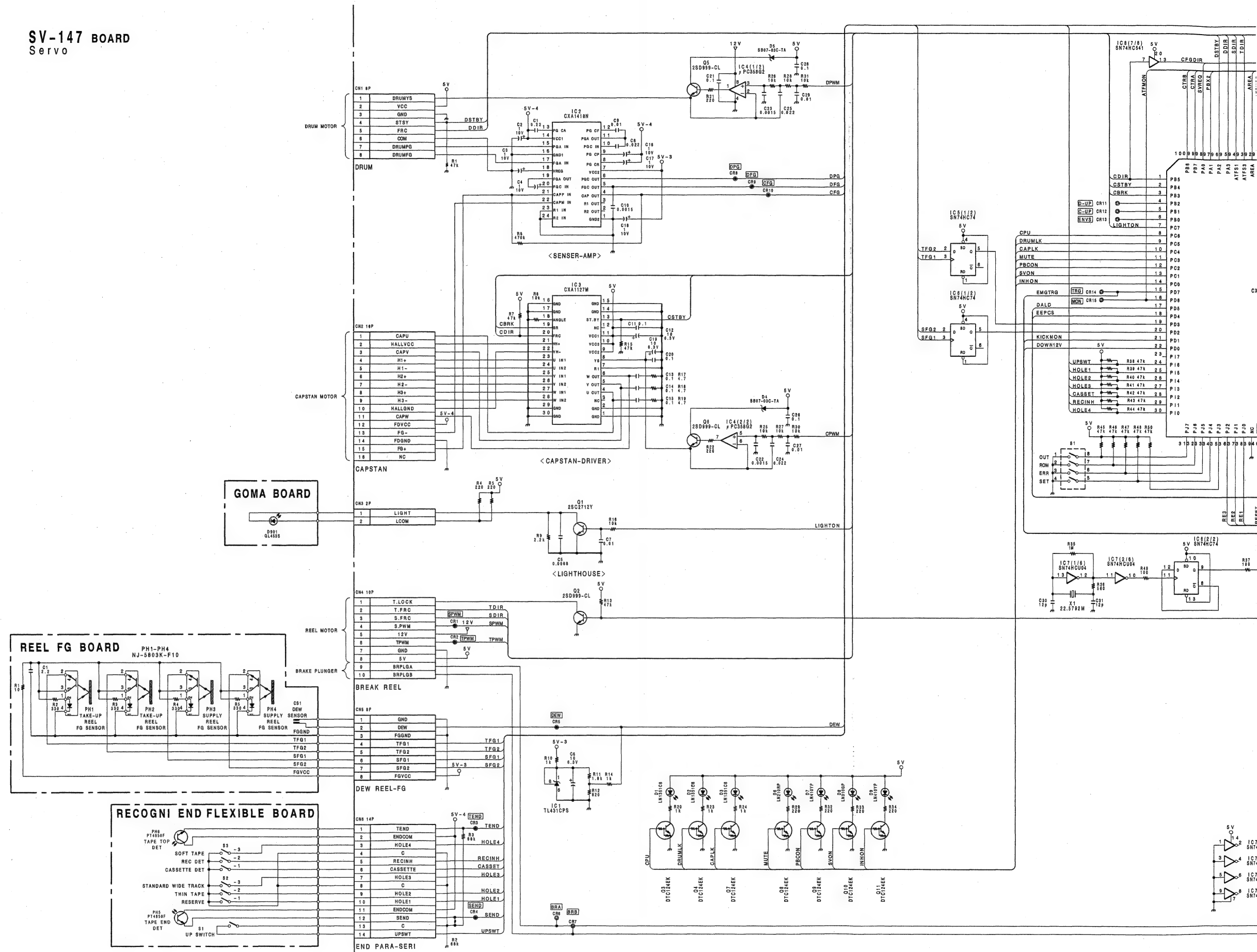


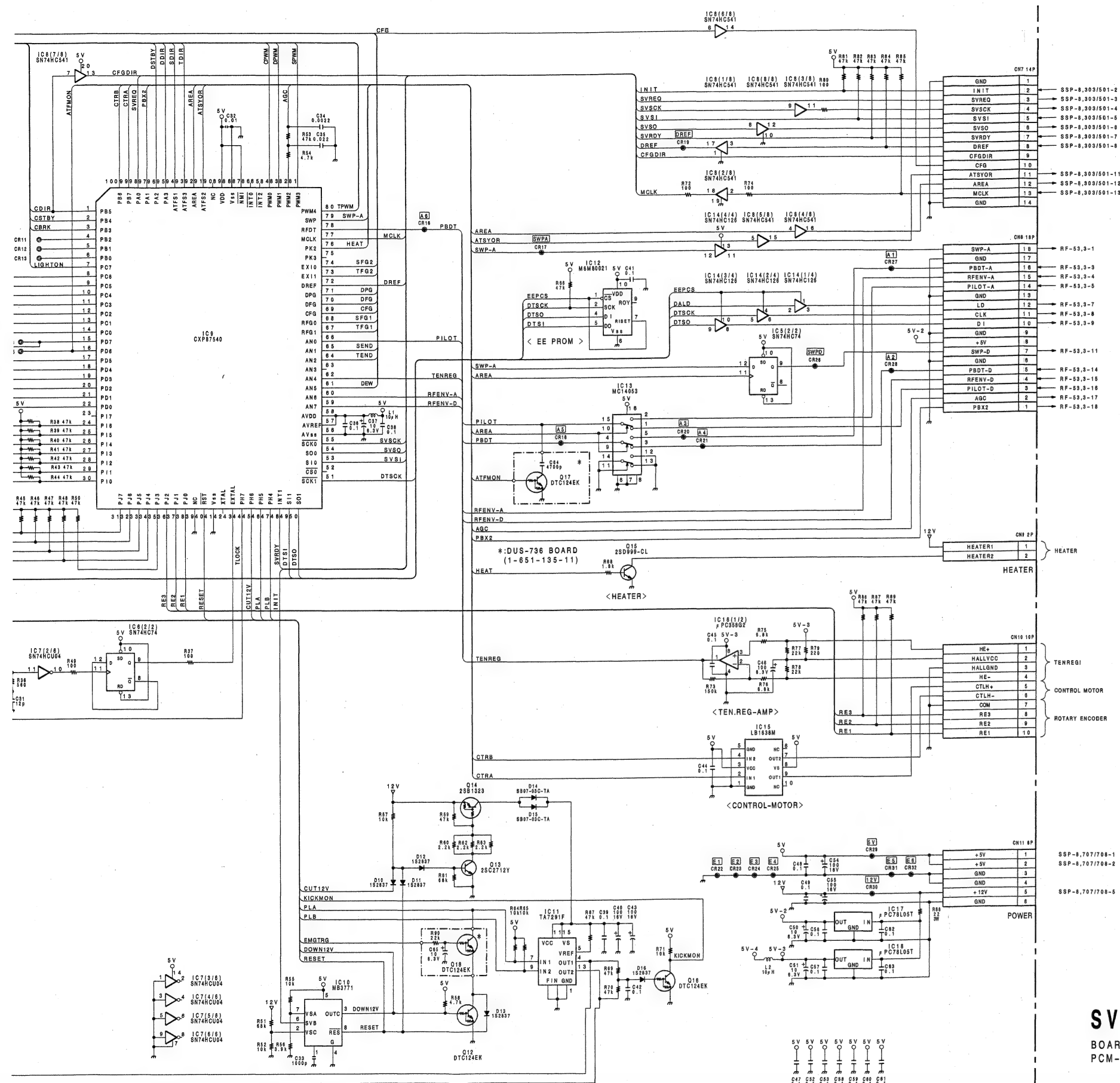
Changed Information

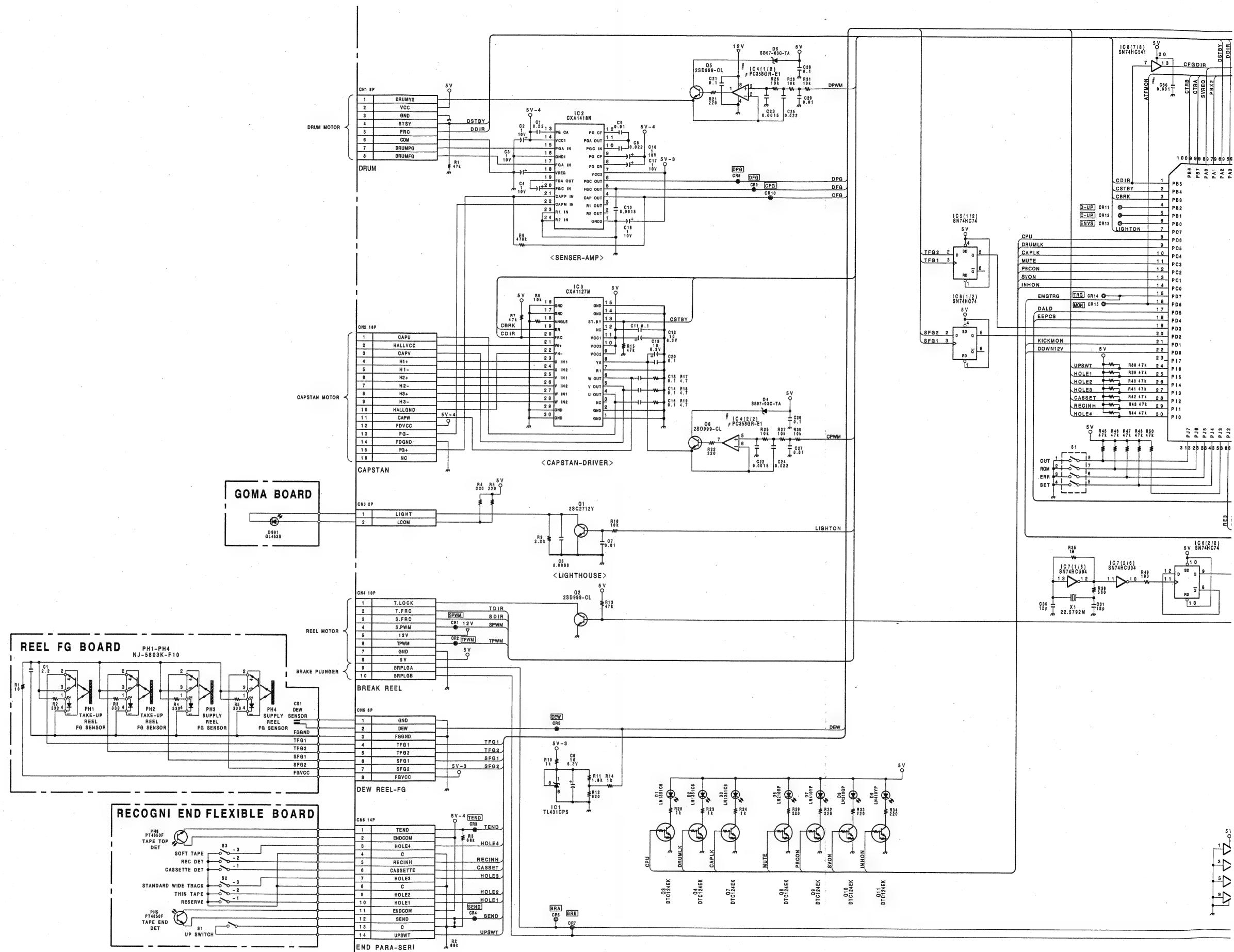
Applied Serial No.	Parts that have been changed.
J ;10111 and higher UC ;20056 and higher EK ;50236 and higher	C121,221 0.1 μ F 25V \rightarrow 10 μ F 6.3V

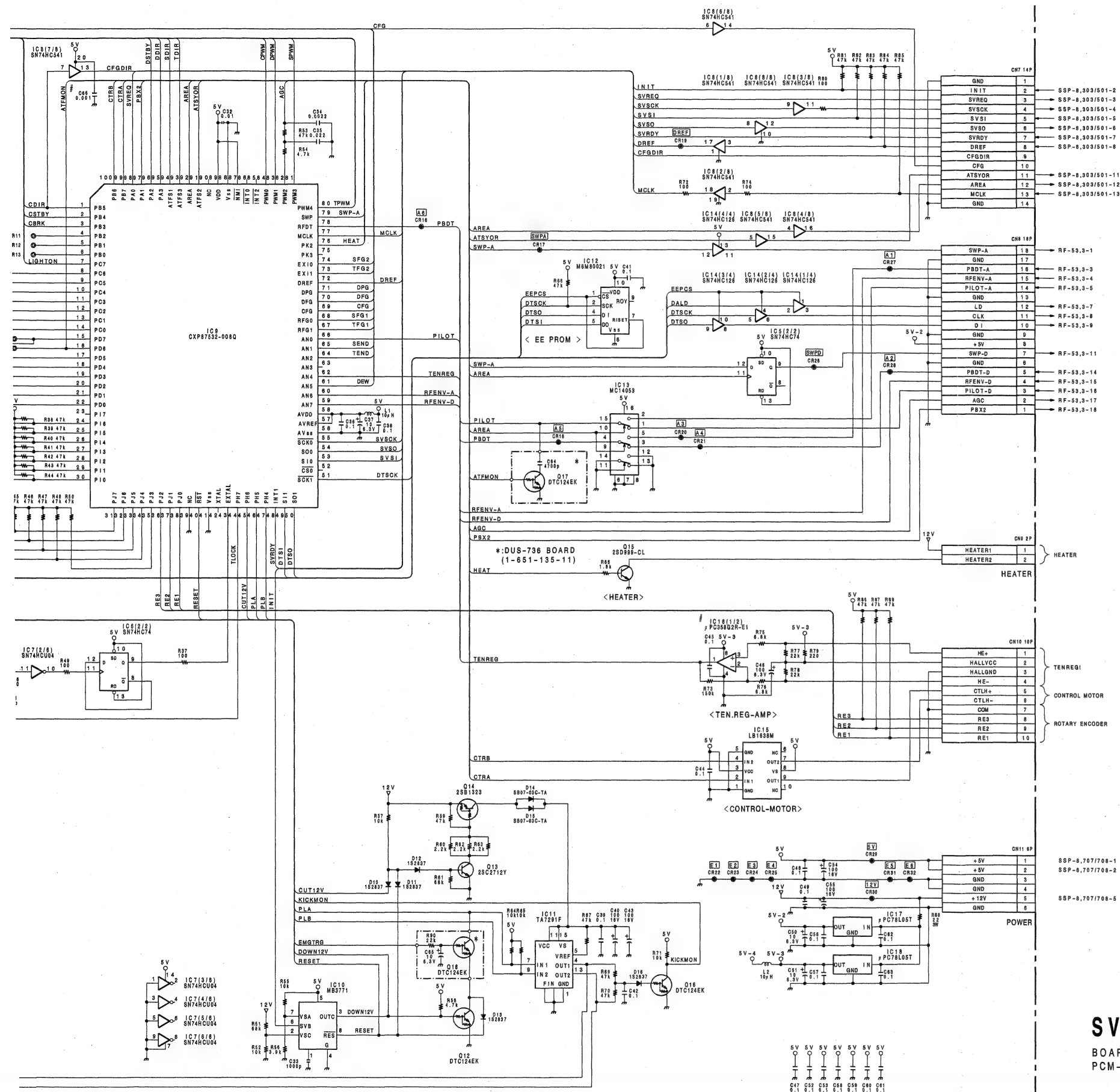
RF-53 BOARD

BOARD NO.1-650-046-11,12
PCM-E7700

SV-147 BOARD
Servo



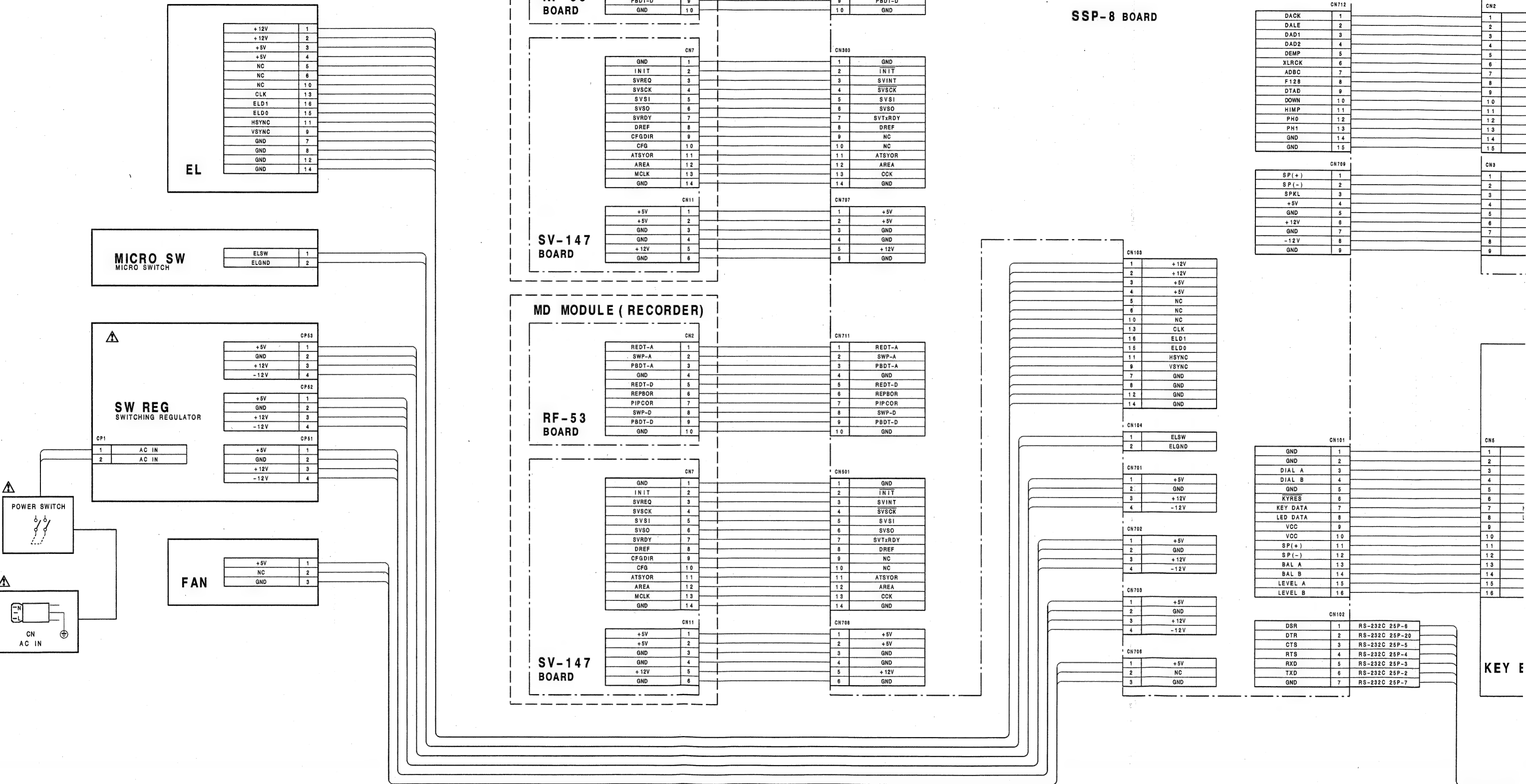
SV-147 BOARD
Servo

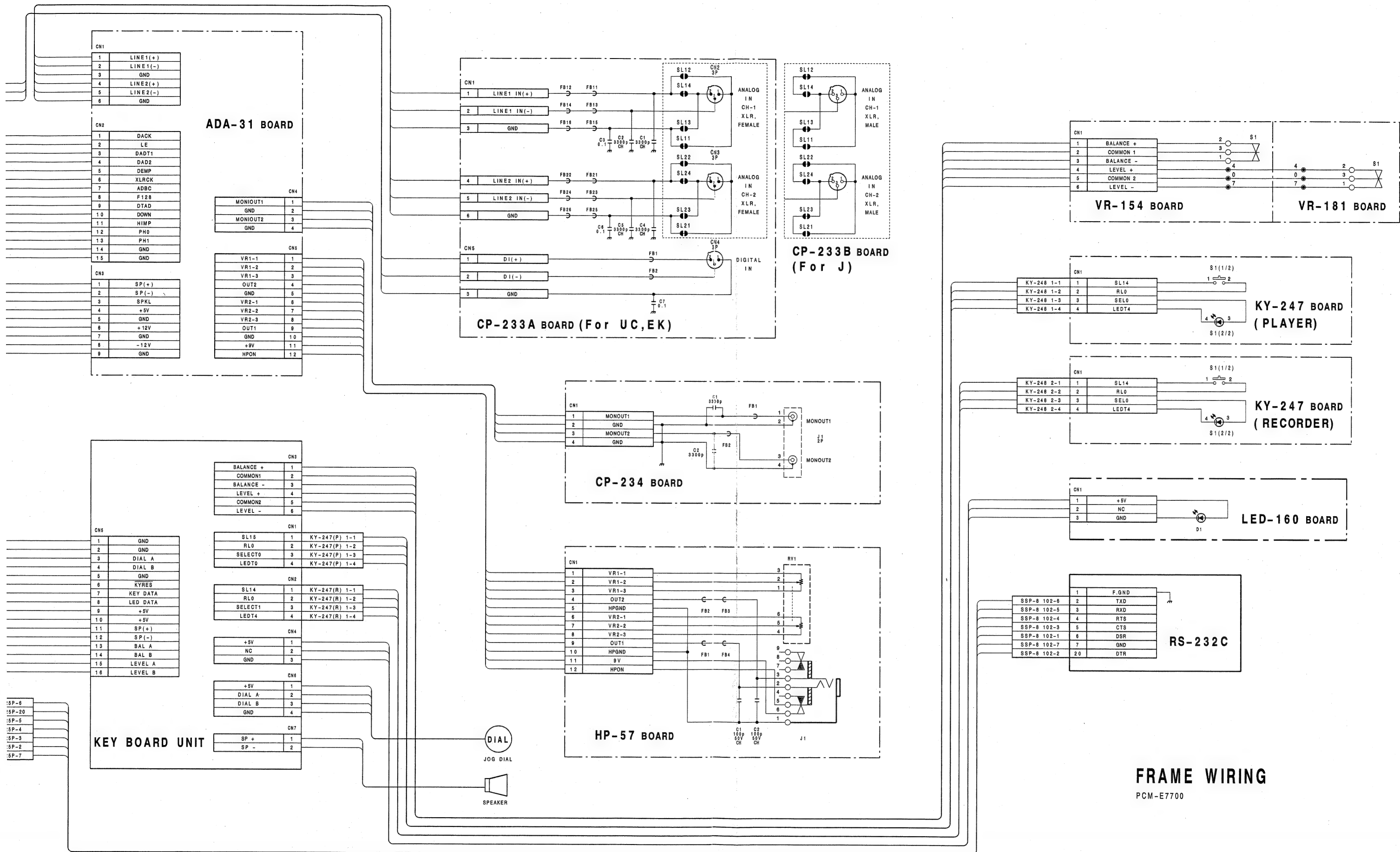


Changed information

Applied Serial No.	Parts that have been changed.	Parts that have been added.	Parts that have been deleted.
J :10111 and higher UC :20056 and higher EK :50236 and higher	IC4,16 PC358G2 → PC358GR-E1	C66	DUS-736 BOARD

FRAME WIRING





FRAME WIRING

PCM-E7700

SECTION 6

SEMICONDUCTOR PIN ASSIGNMENTS

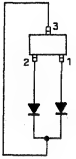
この章の図の中には互換性のないダイオード、トランジスタ、ICが併記されていることがあります。部品を交換をするときには必ず部品表を参照して下さい。
等価回路はICメーカーのData Bookに従いました。

The chart in this section may sometimes show diodes, transistors, and ICs that are not interchangeable. When replacing a component, be sure to refer to the parts list. The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

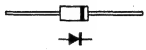
TYPE	PAGE	TYPE	PAGE	TYPE	PAGE
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1S2837	6-2	AM26LS31CNS	6-3	SN74HC14ANS	6-15
1SS119	6-2	AM26LS32ACNS	6-3	SN74HC164ANS	6-16
CL-150PG-CD	6-2	CS5326-KP	6-3	SN74HC166ANS	6-16
CL-150R-CD	6-2	CX23065A	6-4	SN74HC21ANS	6-16
CL-150Y-CD	6-2	CXA1127AM	6-4	SN74HC257ANS	6-16
DA204U	6-2	CXA1364R	6-5	SN74HC32ANS	6-16
EC10DS2	6-2	CXA1418N	6-4	SN74HC541ANS	6-16
GL-1EG111	6-2	CXD1102Q	6-6	SN74HC574ANS	6-17
GL453	6-2	CXD2605R	6-7	SN74HC74ANS	6-17
GL453S	6-2	CXD2704Q	6-8	SN74HCU04ANS	6-15
LA-301VB	6-2	CXD8864Q	6-9	SN74LS03NS	6-17
LN1351C6	6-2	CXK581100TM-10LL	6-8	SN74LS624NS	6-17
LN210RP	6-2	CXK58257ATM-70LL	6-10	ST93CS56M1	6-17
LN310GP	6-2	HD14053BFP	6-10	TA7291F	6-17
LN410YP	6-2	LB1638M	6-11	TA7809S	6-18
MA152WK	6-2	LT1134CS	6-10	TC4052BFHB	6-18
NSQ03A04	6-2	M6M80021FP	6-11	TC4S66F	6-18
SB07-03C	6-2	MB3771PF	6-11	TC7S00F	6-15
<TRANSISTOR>					
2SA1162Y	6-2	MB8421-90LPFQ	6-11	TC7SU04F	6-18
2SB1323	6-2	MB8431-90LPFQ	6-12	TD62381F	6-18
2SC2223	6-2	MB88346BPFV	6-12	TL431CPS	6-18
2SC2712	6-2	MC14053BF	6-10	TL7705CPS-B	6-18
2SC2712Y	6-2	MSM5832RS	6-13	TMS27C240-12JL	6-19
2SD773	6-2	MSM6338MS-K	6-13	TMS44400-80SD	6-19
2SD999-CLCK	6-2	NJL5803K-F10	6-13	UPC358G2	6-19
DTA124EK	6-2	NJM2073M	6-13	UPC78L05T	6-19
DTC124EK	6-2	NJM4556M-A	6-13	UPD4702G	6-19
PT4850F	6-2	NJM4560M	6-14	UPD70216L	6-20
THS117	6-2	NJM7805FA	6-14	UPD71054GB-10-3B4	6-21
<IC>					
74F244SJ	6-3	NJM7809FA	6-14	UPD71055GB-10-3B4	6-21
		NJM78L05A	6-14	UPD71059GB-10-3B4	6-23
		NJM7905FA	6-14	UPD71101GD-10-5BB	6-22
		NJM7909FA	6-14	UPD72020GC-8-3B6	6-24
		PALCE16V8Q-25JC	6-14	XRA17809T	6-14
		PCM56P	6-14		
		SC7S00F	6-15		
		SN74HC00ANS	6-15		
		SN74HC02ANS	6-15		
		SN74HC04ANS	6-15		
		SN74HC08ANS	6-15		
		SN74HC126ANS	6-15		
		SN74HC139ANS	6-15		

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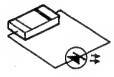
1S2837
MA152WK



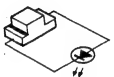
1SS119



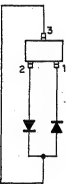
CL-150PG-CD ; GREEN
CL-150R-CD ; RED



CL-150Y-CD ; AMBER



DA204U



EC10DS2
NSQ03A04



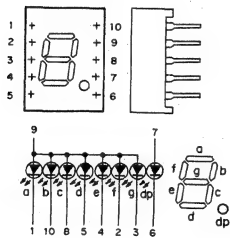
GL-1EG111 ; YELLOWISH GREEN



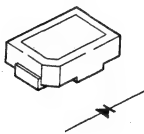
GL453 ; INFRARED
GL453S ; INFRARED



LA-301VB ; RED



LN1351C6



LN210RP ; RED
LN310GP ; GREEN
LN410YP ; YELLOW

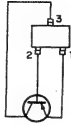


SB07-03C

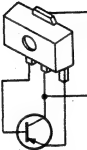


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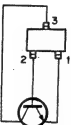
2SA1162Y



2SB1323



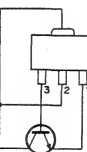
2SC2223
2SC2712
2SC2712Y



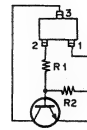
2SD773



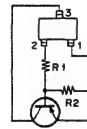
2SD999-CLCK



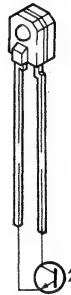
DTA124EK (R1 = 22K, R2 = 22K)



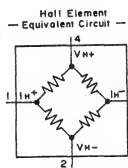
DTC124EK (R1 = 22K, R2 = 22K)



PT4850F

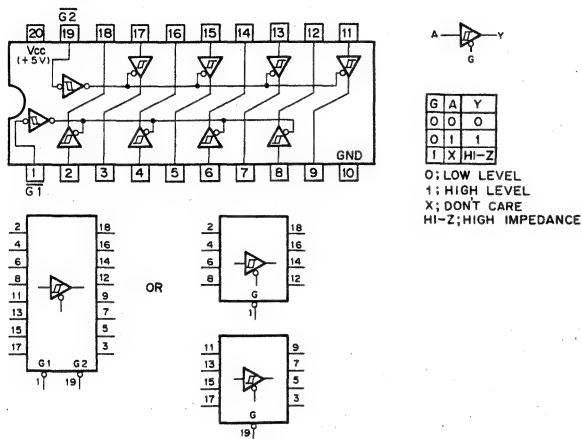


THS117

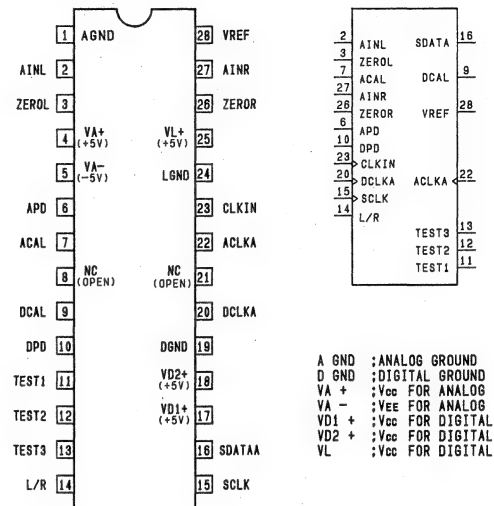


<IC>

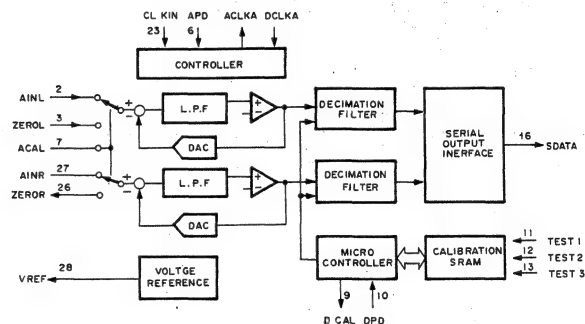
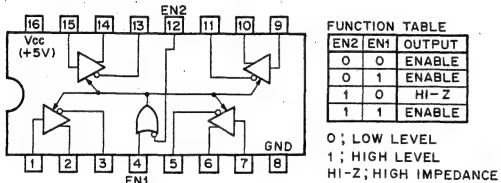
74F244SJ (NS) FLAT PACKAGE

TTL 3-STATE SCHMITT TRIGGER BUFFER/DRIVER
- TOP VIEW -

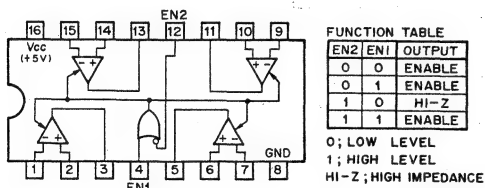
CS5326-KP (ASAHIKASEI)

16-BIT OVERSAMPLING STEREO A/D CONVERTER
- TOP VIEW -

AM26LS31CNS (TI) FLAT PACKAGE

HIGH SPEED DIFFERENTIAL LINE DRIVER
- TOP VIEW -

AM26LS32ACNS (TI) FLAT PACKAGE

HIGH SPEED DIFFERENTIAL LINE RECEIVER
- TOP VIEW -

INPUT

ACAL : ANALOG CALIBRATION NORMALLY, CONNECT TO DCAL PIN.
AINL : L CHANNEL ANALOG INPUT
AINR : R CHANNEL ANALOG INPUT
APD : ANALOG POWER DOWN (H = POWER DOWN MODE) NORMALLY, CONNECT TO DPD PIN.
CLKIN : MASTER CLOCK
DCLKA : DIGITAL SYSTEM CLOCK
DPD : DIGITAL POWER DOWN (H = POWER DOWN MODE)
L/R : INPUT CHANNEL SELECTION
SCLK : DATA CHANNEL OUTPUT FROM SDATA PIN IS SELECTED. (H = L CHANNEL DATA, L = R CHANNEL DATA)
TST1~TST3 : SERIAL DATA OUTPUT CLOCK
ZEROL : L CHANNEL ZERO LEVEL INPUT
ZEROR : R CHANNEL ZERO LEVEL INPUT

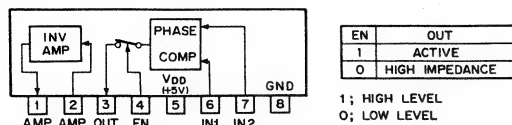
OUTPUT

ACLKA : ANALOG SYSTEM CLOCK (CONNECT TO DCLKA PIN.)
DCAL : DIGITAL CALIBRATION
SDATA : SERIAL DATA OUTPUT
VREF : DATA IS OUTPUT IN ORDER FROM MSB IN 2ND COMPLEMENT.
VREF : REFERENCE VOLTAGE SUPPLY OF -3.6V

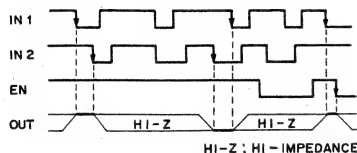
	SENSE	INPUT VOLT
C32/LS32	± 200mV	± 7V
LS33	± 500mV	± 15V

CX23065A (SONY)

N-MOS PHASE COMPARATOR WITH INVERSION AMPLIFIER
- PRINTED SIDE VIEW -

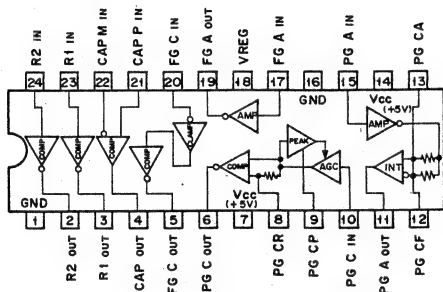


TIMING CHART



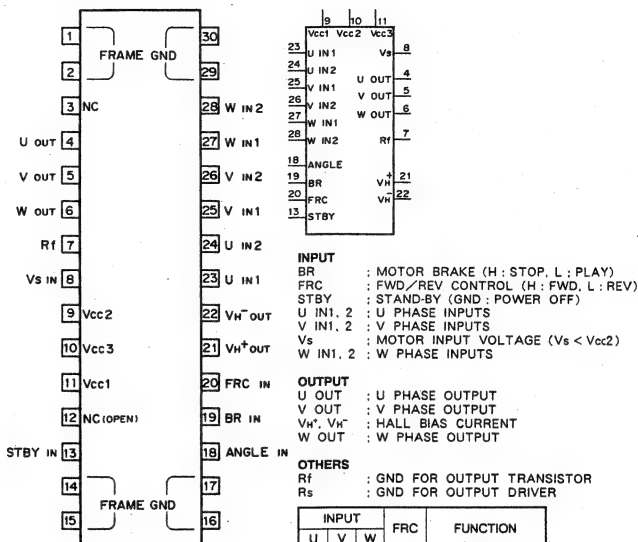
CXA1418N (SONY)

SENSOR AMPLIFIER FOR R-DAT
- TOP VIEW -



CXA1127AM (SONY) FLAT PACKAGE

CAPSTAN MOTOR DRIVER
- TOP VIEW -

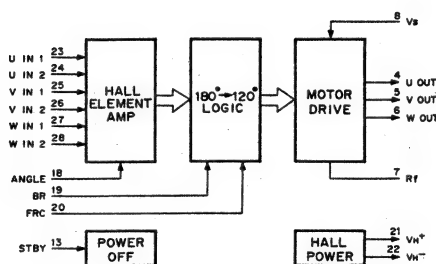


NOTE :

Vcc1	+4 to +7V	OPEN
Vcc2	+4 to +12V	+6 to +12V
Vcc3	short to Vcc1	short to Vcc2
Vs	Vs < Vcc2	Vs < Vcc2

INPUT			FRC	FUNCTION
U	V	W		
H	H	L	0	W → V PHASE
			1	V → W PHASE
H	L	L	0	W → U PHASE
			1	U → W PHASE
L	L	H	0	V → W PHASE
			1	W → V PHASE
L	H	L	0	U → V PHASE
			1	V → U PHASE
H	L	H	0	V → U PHASE
			1	U → V PHASE
L	H	H	0	U → W PHASE
			1	W → U PHASE

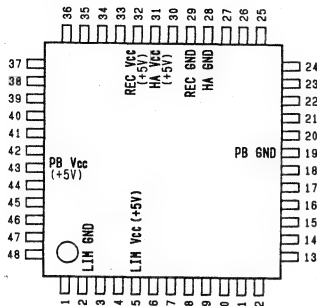
H : HIGH LEVEL
L : LOW LEVEL
1 : 2.0 to Vcc2
0 : 0 to 0.3V



CX1364R (SONY)

REC/PB AMP FOR R-DAT

- TOP VIEW -



(Vcc = +5V)

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	O	LIM OUT	13	O	PLT OUT	25	-	B PC	37	O	A HA OUT
2	-	LIM GND	14	I	GCA CTL	26	I	B HA IN	38	-	SAG TC
3	I	MOD1 IN	15	-	EQ PHASE	27	O	B RA OUT	39	-	A R PCM
4	I	MOD2 IN	16	-	EQ Q	28	-	HA GND	40	-	B R PCM
5	-	LIM Vcc	17	-	EQ HIGH	29	-	REC GND	41	-	A R PLT
6	O	ENV OUT	18	-	EQ LOW	30	I	REC BIAS	42	-	B R PLT
7	-	ENV COMP	19	-	PB GND	31	-	HA Vcc	43	-	PB Vcc
8	-	ENV PEAK	20	I	EQ IN	32	-	REC Vcc	44	I	REDT IN
9	I	LIM IN	21	O	SWA OUT	33	O	A RA OUT	45	I	REPB IN
10	O	EQ OUT	22	O	V REG	34	I	A HA IN	46	I	PIPC IN
11	O	P EV OUT	23	O	B HA OUT	35	-	A PC	47	I	SWP IN
12	I	P ENV IN	24	-	B LPC	36	-	A LPC	48	I	NRM HLF

INPUT

A HA IN : Ach HEAD AMPLIFIER INPUT

B HA IN : Bch HEAD AMPLIFIER INPUT

EQ IN : PCM EQ INPUT

GCA CTL : PILOT GCA GAIN CONTROL VOLTAGE INPUT

LIM IN : PB LIMITER AND RF ENVELOPE DETECTOR INPUT

MOD1 IN, MOD2 IN : OPERATION MODE SWITCHING LOGIC INPUT

NRM HLF : NORMAL/HALF SPEED SWITCHING SIGNAL INPUT

P ENV IN : PILOT GCA INPUT

PIPC IN : PCM/PILOT REC AREA SWITCHING SIGNAL INPUT

REC BIAS : REC FINAL STAGE CURRENT AMPLIFIER INPUT

REDT IN : REC SIGNAL INPUT

REPB IN : REC/PB SWITCHING SIGNAL INPUT

SWP IN : A/B SWITCHING SIGNAL INPUT

OUTPUT

A HA OUT : Ach HEAD AMPLIFIER OUTPUT

A RA OUT : Ach REC AMPLIFIER OUTPUT

B HA OUT : Bch HEAD AMPLIFIER OUTPUT

B RA OUT : Bch REC AMPLIFIER OUTPUT

ENV OUT : RF ENVELOPE DETECTOR OUTPUT

EQ OUT : PCM EQUALIZER OUTPUT

LIM OUT : PB LIMITER OUTPUT

P EV OUT : PILOT ENVELOPE OUTPUT

PLT OUT : PILOT FILTER OUTPUT

SWA OUT : SWITCH AMPLIFIER OUTPUT

V REG : REGULATOR OUTPUT

OTHERS

A LPC : CONNECTION PIN FOR SMOOTHING CAPACITOR OF Ach HEAD AMPLIFIER DC SERVO

A PC : CONNECTION PIN FOR EMITTER BYPASS CAPACITOR OF Ach HEAD AMPLIFIER FIRST STAGE GROUNDED EMITTER TRANSISTOR

A R PCM : CONNECTION PIN FOR RESISTOR DETERMINING Ach REC CURRENT

A R PLT : CONNECTION PIN FOR RESISTOR DETERMINING, ALONG WITH RESISTOR OF PIN 39, Ach PILOT SIGNAL REC CURRENT

B LPC : CONNECTION PIN FOR DC SMOOTHING CAPACITOR OF Bch HEAD AMPLIFIER DC SERVO

B PC : CONNECTION PIN FOR EMITTER BYPASS CAPACITOR OF Bch HEAD AMPLIFIER FIRST STAGE GROUNDED EMITTER TRANSISTOR

B R PCM : CONNECTION PIN FOR RESISTOR DETERMINING Bch REC CURRENT

B R PLT : CONNECTION PIN FOR RESISTOR DETERMINING, ALONG WITH RESISTOR OF PIN 40, Bch PILOT SIGNAL REC CURRENT

ENV COMP : FOR CONTROLLING RF ENVELOPE THRESHOLD VOLTAGE

ENV PEAK : CONNECTION PIN OF THE CAPACITOR FOR RF PEAK HOLD

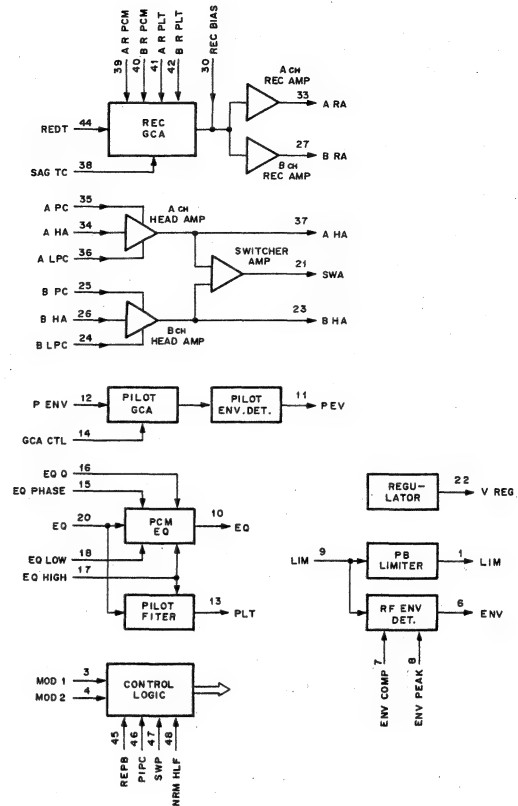
EQ HIGH : RESISTOR OR CURRENT SOURCE IS CONNECTED FOR DETERMINING PCM EQ HIGH BAND PEAK FREQUENCY AND PILOT FILTER CUT OFF FREQUENCY

EQ LOW : RESISTOR OR CURRENT SOURCE IS CONNECTED FOR DETERMINING PCM EQ LOW BAND CHARACTERISTIC

EQ PHASE : RESISTOR OR CURRENT SOURCE IS CONNECTED FOR DETERMINING PCM EQ PHASE CHARACTERISTIC

EQ Q : RESISTOR OR CURRENT SOURCE IS CONNECTED FOR DETERMINING PCM EQ HIGH BAND PEAK GAIN

SAG TC : CONNECTION PIN FOR CAPACITOR CORRECTING THE REC WAVEFORM SAG



CXD1102Q (SONY) FLAT PACKAGE
C-MOS EL DISPLAY UNIT CONTROLLER
- TOP VIEW -



PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	I/O	AD04	17	O	MA02	33		VDD	49	I/O	MDO1
2		GND	18	O	MA03	34	I/O	MD14	50	I/O	MDO0
3		NC	19	O	MA04	35	I/O	MD13	51	I	TEST1
4	I/O	AD03	20	O	MA05	36	I/O	MD12	52		GND
5	I/O	AD02	21	O	MA06	37	I/O	MD11	53	I	CK
6	I/O	AD01	22		NC	38	I/O	MD10	54	I	TEST2
7	I/O	AD00	23		GND	39	I/O	MDO9	55	I	VDC2
8	I	WPI1	24	O	MA07	40	I/O	MDO8	56	I	VDC1
9	I	WPI2	25	O	MA08	41	I/O	MDO7	57	I	VDC0
10	O	WPO	26		GND	42		GND	58	O	VD
11	O	MWE	27	O	MA10	43		NC	59	O	HD
12		GND	28	O	MA11	44	I/O	MDO6	60	O	DIN
13	O	MCE	29	O	MA12	45	I/O	MDO5	61	I	DBIN
14	O	MOE	30	O	MA13	46	I/O	MDO4	62		NC
15	O	MA00	31	O	MA14	47	I/O	MDO3	63		GND
16	O	MA01	32	I/O	MA15	48	I/O	MDO2	64	O	CKX2

MA00-MA14; MEMORY ADDRESS OUTPUTS
MD00-MA15; MEMORY DATA INPUTS/OUTPUTS
AD00-AD15; MEMORY ADDRESS INPUTS/
MEMORY DATA INPUTS/OUTPUTS

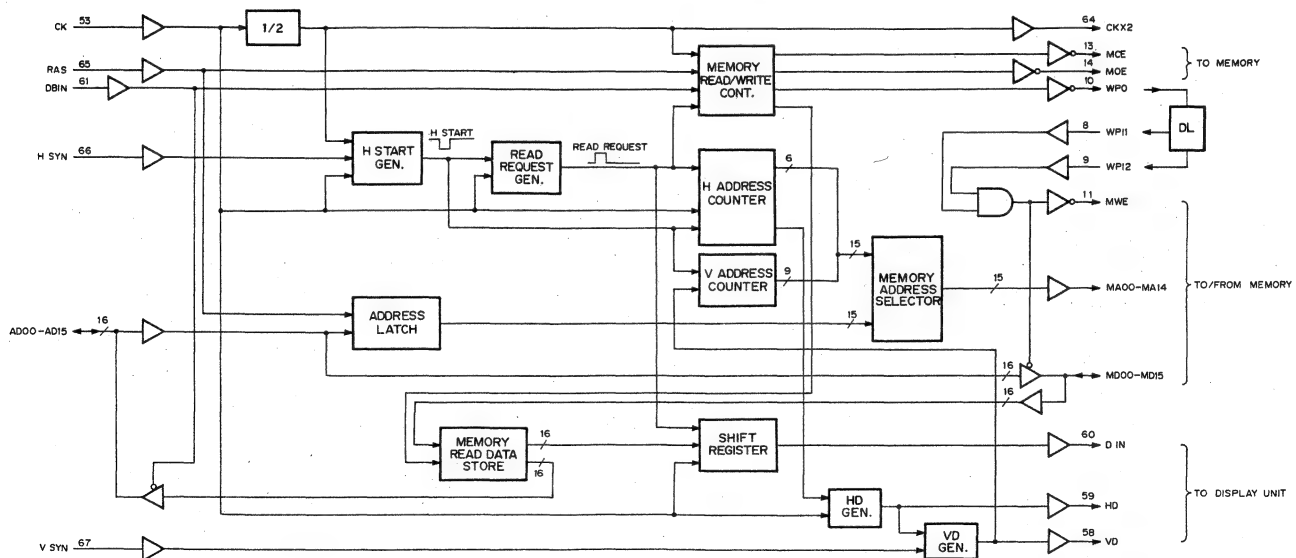
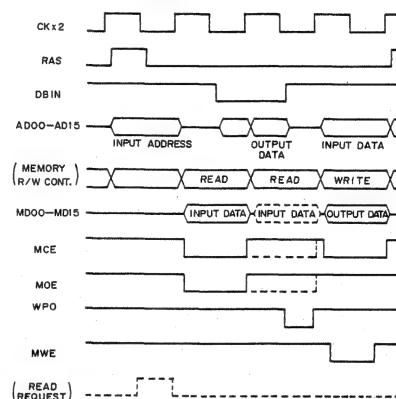
CKX2; 1/2 CK OUTPUT
RAS; READ ENABLE INPUT
DBIN; WRITE ENABLE INPUT
HSYN; H COUNTER START PULSE INPUT
VSYN; V COUNTER START PULSE INPUT

MCE; MEMORY CHIP ENABLE INPUT
MOE; MEMORY OUTPUT ENABLE INPUT
MWE; MEMORY WRITE ENABLE INPUT
WPO; WRITE MODE OUTPUT
WPI1, WPI2; DELAYED WPO INPUTS

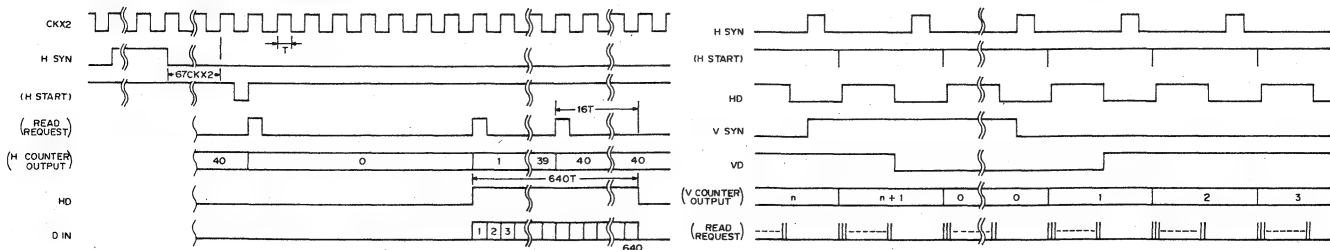
DIN; DISPLAY DATA OUTPUT
HD; DISPLAY H SYNC OUT
VD; DISPLAY V SYNC OUT

7	AD00	WPI1	8
6	AD01	WPI2	9
5	AD02	WPO	10
4	AD03	MWE	11
1	AD04	MCE	12
80	AD05	MCE	13
79	AD06	MOE	14
78	AD07	MA00	15
77	AD08	MA01	16
76	AD09	MA02	17
75	AD10	MA03	18
74	AD11	MA04	19
73	AD12	MA05	20
72	AD13	MA06	21
71	AD14	MA07	22
70	AD15	MA08	23
69	AD15	MA09	24
68	RAS	MA10	25
67	DBIN	MA11	26
66	HSYN	MA12	27
65	VSYN	MA13	28
64		MA14	29
63		MDO0	30
62		MDO1	31
61		MDO2	32
60		MDO3	33
59		MDO4	34
58		MDO5	35
57		MDO6	36
56		MDO7	37
55		MDO8	38
54		MDO9	39
53		MDO10	40
52		MDO11	41
51		MDO12	42
50		MDO13	43
49		MDO14	44
48		MDO15	45
47		DIN	46
46		HD	47
45		VD	48
44		CKX2	49

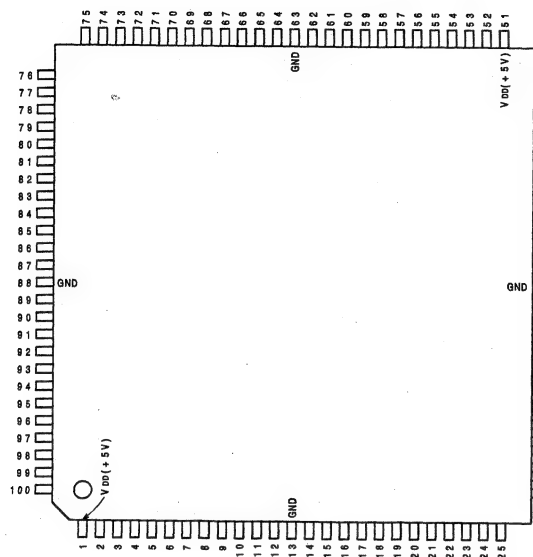
TIMING CHART (MEMORY CONTROL)



TIMING CHART (DISPLAY DATA READ SEQUENCE)



CXD2605R (SONY) FLAT PACKAGE
C-MOS SIGNAL PROCESSOR FOR R-DAT
- TOP VIEW -



(VDD = +5V)

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	-	VDD	26	O	COLK	51	-	VDD	76	I	DADO
2	O	AT0	27	I	MUTE	52	O	TX	77	O	ADDI
3	O	AT1	28	O	MUTM	53	I	TST6	78	I	ADDN
4	O	AT2	29	O	UNLK	54	I/O	EXSY	79	I	ERRI
5	O	AT3	30	I	RFCT	55	I/O	EXSN	80	O	ERRF
6	O	AT4	31	O	SYMN	56	I/O	F128	81	O	MNTG
7	O	XWE	32	I	TST5	57	O	F256	82	I/O	D7
8	O	XOE	33	O	PLCK	58	O	F512	83	I/O	D6
9	O	XEAN	34	I	TST2	59	I	ADLF	84	I/O	D5
10	I	TST1	35	I	RFDT	60	I	DALF	85	I/O	D4
11	O	XT10	36	I	XCS	61	O	XT20	86	I/O	D3
12	I	XT11	37	I	SWP	62	I	XT21	87	I/O	D2
13	-	GND	38	-	GND	63	-	GND	88	-	GND
14	I	XRST	39	O	PIPC	64	O	XT30	89	I/O	D1
15	O	CLKO	40	O	REPB	65	I	XT31	90	I/O	D0
16	O	MINT	41	O	REDT	66	I	FSEN	91	O	A00
17	I	ATSY	42	I	TST4	67	O	LR03	92	O	A01
18	O	MCLK	43	O	PDO	68	O	LR02	93	O	A02
19	O	DREF	44	I	SELC	69	O	LR01	94	O	A03
20	O	SBPM	45	I	MUTA	70	I/O	LRCK	95	O	A04
21	I	EXCK	46	I	PLCO	71	O	WCK	96	O	A05
22	I	SDS1	47	O	PLVR	72	O	XBCK	97	O	A06
23	O	SDSO	48	O	PLRF	73	I/O	BCK	98	O	A07
24	O	SBSY	49	I	MSSL	74	I	ADDT	99	O	A08
25	O	RFPL	50	I	RX	75	O	DADT	100	O	A09

INPUT

ADDN :AUDIO SIGNAL FOR AES/EBU DIGITAL IN. NORMALLY CONNECTED TO ADDI
 ADDT :SERIAL DATA FROM ADC. SYNCHRONIZES WITH BCK
 ADLF :LSB-MSB FIRST SELECTION FOR ADDT/ADDN/ADDI SIGNALS. LSB FIRST IS SELECTED WHEN 'H'
 ATSY :ATF SYNC SIGNAL. SYNCHRONIZES WHEN 'H'
 DALF :LSB/MSB FIRST SELECTION FOR DADT/DADO SIGNALS. LSB FIRST WHEN 'H'
 DADO :AUDIO SIGNAL FOR AES/EBU DIGITAL OUT. NORMALLY CONNECTED TO DADT
 ERRI :VALIDITY FLAG FOR AES/EBU DIGITAL OUT. NORMALLY CONNECTED TO ERRF
 EXCK :CLOCK FOR DATA TRANSMISSION WITH μ COM
 FSEN :F128,BCK,LCK INPUT/OUTPUT SELECTION. OUTPUT WHEN 'H'
 MSSL :MASTER/SLAVE SELECTION. MASTER WHEN 'H'
 MUTA :MUTES REC MONITOR SOUNDS AS WELL. 49.152MHz WHEN 'H'
 MUTE :DOES NOT MUTE REC MONITOR SOUNDS. MUTES WHEN 'H'
 PLCO :RX-ANALOG PLL EXTERNAL VCO CLOCK INPUT
 RFCT :RF SIGNAL OUT CONTROL. CUTS WHEN 'H'
 RFDT :PLAYBACK RF SIGNAL
 RX :AES/EBU DIGITAL IN SIGNAL
 SDS1 :SERIAL DATA INPUT FROM μ COM
 SDSO :SERIAL DATA OUTPUT TO μ COM
 SELC :CRYSTAL 3 LIQUID C
 SWP :PLAYBACK RF SIGNAL DISCRIMINATION. A CH TRACK WHEN 'L' AND B CH TRACK WHEN 'H'
 TST1 :TEST PIN, FIXED AT 'L'
 TST2 :TEST PIN, FIXED AT 'L'
 TST4 :TEST PIN, FIXED AT 'L'
 TST5 :TEST PIN, FIXED AT 'H'
 TST6 :TEST PIN, FIXED AT 'H'
 XCS :CHIP SELECT FOR DATA TRANSMISSION WITH μ COM. TRANSMISSION PERMITTED WHEN 'L'
 XRST :RESET INPUT. RESETS WHEN 'L'
 XT11 :CRYSTAL OSCILLATION CIRCUIT 1 INPUT
 XT21 :CRYSTAL OSCILLATION CIRCUIT 2 INPUT
 XT31 :CRYSTAL OSCILLATION CIRCUIT 3 INPUT

OUTPUT

A00-A14 :EXTERNAL RAM ADDRESS OUTPUT
 ADDI :AUDIO SIGNAL FOR AES/EBU DIGITAL IN
 COLK :9.8304MHz/12.288MHz
 CLKO :SYSTEM CLOCK OUTPUT(4.9152MHz/8.192MHz)
 DADT :SERIAL DATA TO DAC
 DREF :SIGNAL WITH SBSY PERIOD AND 50% DUTY
 ERRF :DADT DATA COMPENSATION DISCRIMINATION SIGNAL. COMPENSATION DATA WHEN 'H'
 F256 :256xfs.512xfs WHEN DOUBLE SPEED
 F512 :512xfs.DOES NOT CHANGE EVEN WHEN DOUBLE SPEED
 LR01 :15BCK DELAY SIGNAL OF LRCK
 LR02 :16BCK DELAY SIGNAL OF LRCK/LCK CLOCK OF RX-PLL
 LR03 :LR02 REVERSAL SIGNAL
 MCLK :CHANNEL CLOCK OUTPUT
 MINT :SIGNAL DETECTING INTERVAL BETWEEN PROGRAMS(CD)(AT DIN)/RX-PLL BCK CLOCK
 MNTG :D0 to D7 CORRECTION MONITOR DATA DISCRIMINATION SIGNAL. VALID WHEN 'H'
 MUTM :MUTE MONITOR. MUTES WHEN 'H'
 PDO :PHASE COMPARATOR OUTPUT FOR RX-ANALOG PLL
 PIPC :ATF PILOT SIGNAL DISCRIMINATION OF RECORDING SIGNALS. PILOT SIGNAL WHEN 'H'
 PLCK :RF-PLL CLOCK/RX-PLL F128 CLOCK
 PLRF :RX-ANALOG PLL PHASE COMPARISON SIGNAL(2fs RX SYNC DETECTION SIGNAL)
 PLVR :RX-ANALOG PLL PHASE COMPARISON SIGNAL(2fs FROM THE PLL CLOCK)
 REDT :RECORDING SIGNAL
 REPB :REC-PB DISCRIMINATION SIGNAL. REC WHEN 'H'
 RFPL :1/5880 FREQUENCY DIVISION OF PLL CLOCK
 SBPM :SIGNAL PERMITTING PACK TRANSMISSION WITH μ COM/RX-PLL F256 CLOCK
 SBSY :FRAME SYNC SIGNAL OUTPUT FOR DATA TRANSMISSION WITH μ COM
 SYMN :C1 CHECK RESULTS CORRESPONDING TO RF. 'OK' WHEN 'H'
 TX :AES/EBU DIGITAL OUT SIGNAL
 UNLK :RX-PLL LOCK MONITOR SIGNAL. LOCKS WHEN 'L'
 WCK :2xfs,4xfs WHEN DOUBLE SPEED
 XBCK :BCK REVERSAL SIGNAL
 XEAN :EXTERNAL ADDRESSING ENABLE SIGNAL OUTPUT
 XOE :EXTERNAL RAM OUTPUT ENABLE SIGNAL OUTPUT
 XT10 :CRYSTAL OSCILLATION CIRCUIT 1 OUTPUT(9.408MHz/18.816MHz/37.632MHz)
 XT20 :CRYSTAL OSCILLATION CIRCUIT 2 OUTPUT(22.5792MHz)
 XT30 :CRYSTAL OSCILLATION CIRCUIT 3 OUTPUT(24.576MHz/49.152MHz)
 XWE :EXTERNAL RAM WRITE ENABLE SIGNAL OUTPUT

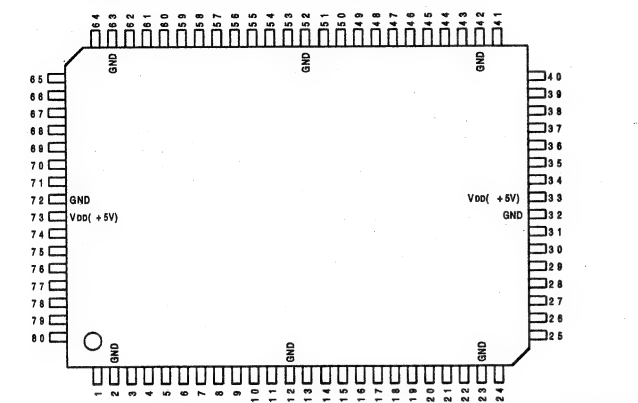
INPUT/OUTPUT

BCK :64xfs 128xfs WHEN DOUBLE SPEED
 D0-D7 :EXTERNAL RAM DATA
 EXSN :EXTERNAL SYNC SIGNAL. NORMALLY CONNECTED TO EXSY
 EXSY :EXTERNAL SYNC SIGNAL. NORMALLY CONNECTED TO EXSN(x1SP:100/8Hz)
 F128 :128xfs,256xfs WHEN DOUBLE SPEED
 LRCK :fs,2xfs WHEN DOUBLE SPEED

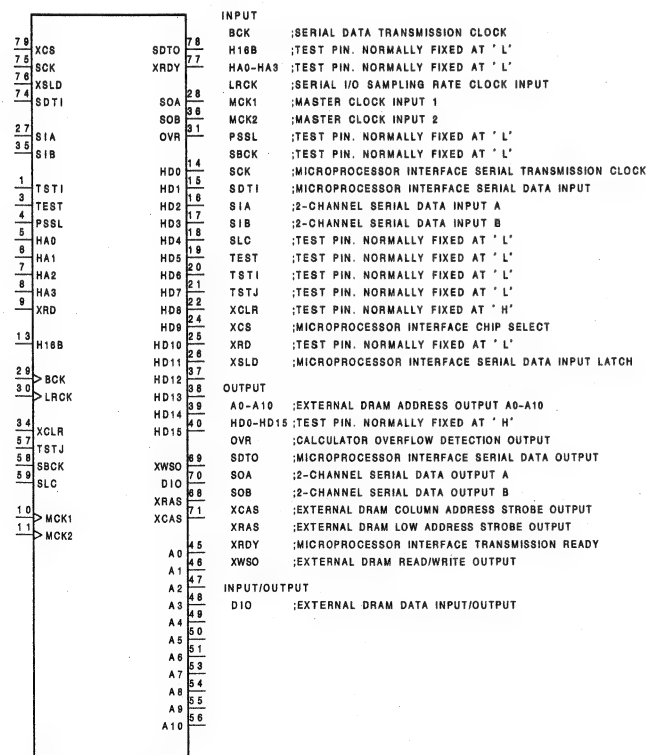
CXD2704Q (SONY) FLAT PACKAGE

C-MOS DIGITAL AUDIO SIGNAL PROCESSOR

- TOP VIEW -



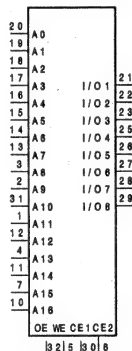
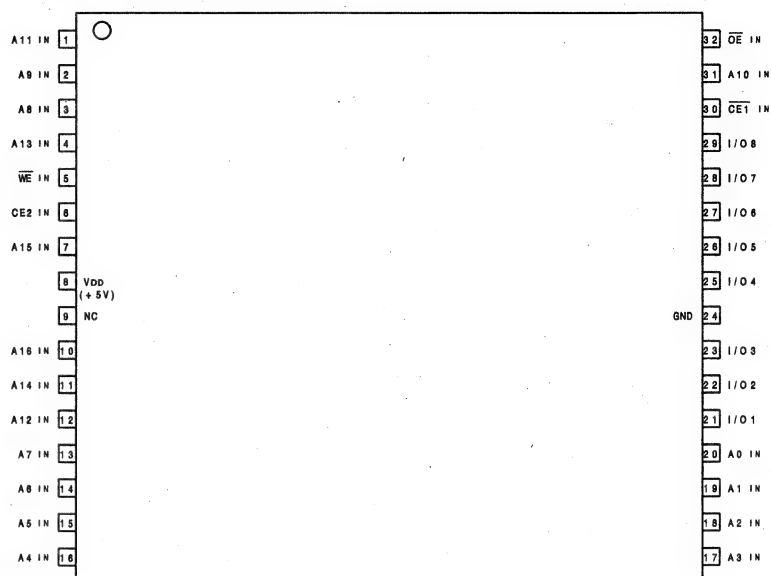
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	TST1	21	O	HD7	41	-	NC	61	-	NC
2	-	GND	22	O	HD8	42	-	GND	62	-	NC
3	I	TEST	23	-	GND	43	-	NC	63	-	GND
4	I	PSSL	24	O	HD9	44	-	NC	64	-	NC
5	I	HA0	25	O	HD10	45	O	A0	65	-	NC
6	I	HA1	26	O	HD11	46	O	A1	66	-	NC
7	I	HA2	27	I	SIA	47	O	A2	67	-	NC
8	I	HA3	28	O	SOA	48	O	A3	68	O	XRAS
9	I	XRD	29	I	BCK	49	O	A4	69	O	XWSO
10	I	MCK1	30	I	LRCK	50	O	A5	70	I/O	DIO
11	I	MCK2	31	O	OVR	51	O	A6	71	O	XCAS
12	-	GND	32	-	GND	52	-	GND	72	-	GND
13	I	H18B	33	-	VDD	53	O	A7	73	-	VDD
14	O	HD0	34	I	XCLR	54	O	A8	74	I	SDTI
15	O	HD1	35	I	SIB	55	O	A9	75	I	SCK
16	O	HD2	36	O	SOB	56	O	A10	76	I	XSLD
17	O	HD3	37	O	HD12	57	I	TSTJ	77	O	XRDY
18	O	HD4	38	O	HD13	58	I	SBCK	78	O	SDTO
19	O	HD5	39	O	HD14	59	I	SLC	79	I	XCS
20	O	HD6	40	O	HD15	60	-	NC	80	-	NC



CXK581100TM-10LL (SONY) FLAT PACKAGE

C-MOS 1M(131072 x 8)-BIT STATIC RAM

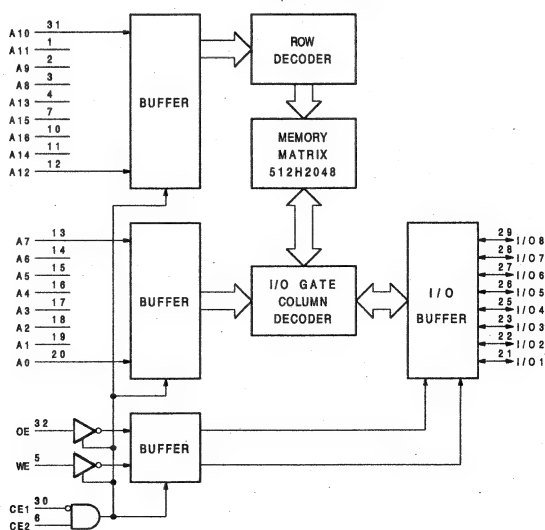
- TOP VIEW -



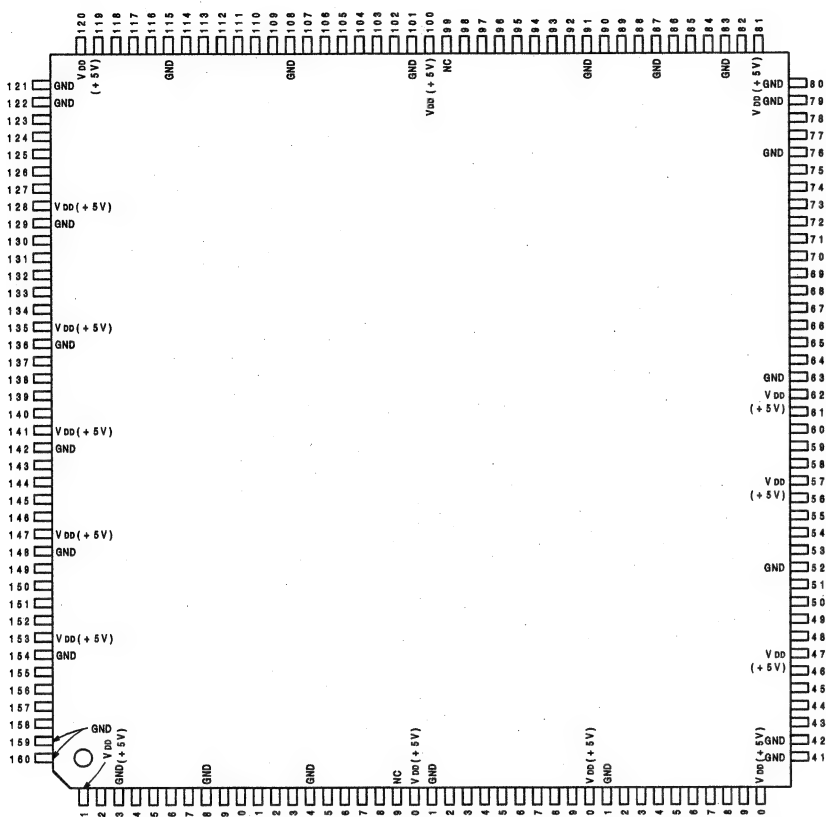
A0-A16 : ADDRESS INPUTS
 CE1, CE2 : CHIP ENABLE INPUT
 I/O0-I/O7 : DATA INPUTS/OUTPUTS
 OE : OUTPUT ENABLE INPUT
 WE : WRITE ENABLE INPUT

CE1	CE2	OE	WE	MODE	I/O TERMINAL
1	x	x	x	NOT SELECT	HIGH IMPEDANCE
x	0	x	x	NOT SELECT	HIGH IMPEDANCE
0	1	1	1	OUTPUT DISABLE	HIGH IMPEDANCE
0	1	0	1	READ	OUTPUT DATA
0	1	x	0	WRITE	INPUT DATA

0 : LOW LEVEL
 1 : HIGH LEVEL
 x : DON'T CARE



CXD8864Q (SONY) FLAT PACKAGE

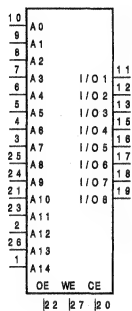
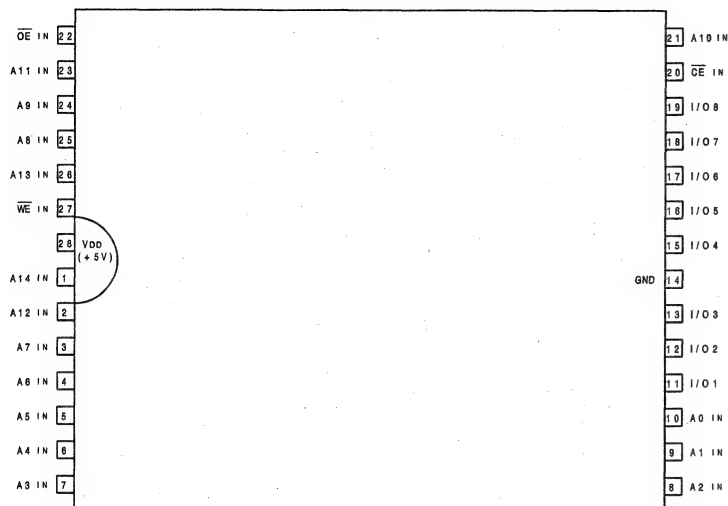
C-MOS SOUND MEMORY CONTROLLER FOR R-DAT
- TOP VIEW -

INPUT	
AB0-AB15	:CPU ADDRESS BUS From SYSTEM
CPUCK	:CPU CLOCK
DATFRM	:DAT FRAME INPUT SIGNAL
DSIEN	:DSP ENABLE SIGNAL
EMU SEL	:EMULATOR SELECTION PIN
ENDRTN	:END RETURN SIGNAL
ERRF	:TEST SIGNAL(NOT USE)
EXCK	:TEST SIGNAL(NOT USE)
EXTSDI	:EXTERNAL SERIAL DATA INPUT
F256	:256-Fs
I/O EN/	:I/O(AREA)ENABLE SIGNAL
I/O RD/	:I/O(AREA)READ SIGNAL
I/O WR/	:I/O(AREA)WRITE SIGNAL
LRCKI	:LR CLOCK INPUT SIGNAL
MEMEN/	:MEMORY(AREA)ENABLE SIGNAL
MRD/	:MEMORY(AREA)READ SIGNAL
MWR/	:MEMORY(AREA)WRITE SIGNAL
NA0,1,2	:DSP ADDRESS
PGMSDI	:SERIAL DATA INPUT
READY	:READY SIGNAL
RESET/	:RESET SIGNAL
SSSY	:TEST SIGNAL(NOT USE)
SDI	:SERIAL DATA INPUT
WRACK	:WRITE ACKNOWLEDGE SIGNAL
XRDY 0, 1, 2	:TRANSMISSION READY(SCK INPUT PROHIBITED)
OUTPUT	
CAS	:DRAM COLUMN ADDRESS STROBE OUTPUT SIGNAL
DSP SEL0, 1, 2	:DSP CHIP SELECT PIN
END	:END SIGNAL
EXTSCK	:EXTERNAL SERIAL TRANSMISSION CLOCK
EXTSDO	:EXTERNAL SERIAL DATA INPUT
EXTSDY	:EXTERNAL TRANSMISSION READY(SCK INPUT PROHIBITED)
EXTSLD	:EXTERNAL SERIAL DATA INPUT LATCH
FS	:FS OUTPUT FOR DSP
FS64	:BIT SHIFT CLOCK OUTPUT FOR DSP
OE	:DRAM OUTPUT ENABLE SIGNAL OUTPUT
PGMSCK	:SERIAL TRANSMISSION CLOCK
PGMSDO	:SERIAL DATA OUTPUT
PGMSLD	:SERIAL DATA INPUT LATCH
RA0-RA9	:ADDRESS BUS to DRAM
RAS	:DRAM LOW ADDRESS STROBE OUTPUT SIGNAL 2
RDRFM	:SIGNAL OUTPUT FOR MEMORY READ INTERRUPTION
RDSTS	:LED OUTPUT FOR DRAM WRITE MONITOR
SDO1,2	:SERIAL DATA OUTPUT 1,2
SDSO	:TEST SIGNAL(NOT USE)
TRGA1	:TRGA OUTPUT SIGNAL
TRGB1	:TRGB OUTPUT SIGNAL
WE	:DRAM WRITE ENABLE SIGNAL
WRFRM	:SIGNAL OUTPUT FOR MEMORY WRITE INTERRUPTION
WRREQ	:WRITE REQUEST SIGNAL
WRSTS	:LED OUTPUT FOR DRAM READ MONITOR
INPUT/OUTPUT	
DB0-DB15	:CPU DATA BUS From SYSTEM
RDQ0-RDQ15	:DATA BUS to DRAM

(VDD = +5V)

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	-	VDD	41	-	GND	81	-	VDD	121	-	GND
2	I	CPUCK	42	-	GND	82	I	F256	122	-	GND
3	-	GND	43	I/O	DB15	83	-	GND	123	O	RA9
4	I	RESET	44	I/O	DB14	84	I	SSSY	124	O	RA8
5	O	READY	45	I/O	DB13	85	O	FS	125	O	RA7
6	I	I/O RD	46	I/O	DB12	86	O	FS64	126	O	RA6
7	I	I/O WR	47	-	VDD	87	-	GND	127	O	RA5
8	-	GND	48	I/O	DB11	88	I	SDI	128	-	VDD
9	I	MRD	49	I/O	DB10	89	O	SDO1	129	-	GND
10	I	MWR/	50	I/O	DB9	90	O	SDO2	130	O	RA4
11	I	I/O EN	51	I/O	DB8	91	-	GND	131	O	RA3
12	I	MEMEN	52	-	GND	92	I	EMU SEL	132	O	RA2
13	I	DSIEN	53	I/O	DB7	93	I	EXTSDI	133	O	RA1
14	-	GND	54	I/O	DB6	94	O	EXTSDY	134	O	RA0
15	O	WRREQ	55	I/O	DB5	95	O	EXTSDO	135	-	VDD
16	I	WRACK	56	I/O	DB4	96	O	EXTSLD	136	-	GND
17	O	END	57	-	VDD	97	O	EXTSCK	137	I/O	RDQ15
18	I	ENDRTN	58	I/O	DB3	98	I	NA2	138	I/O	RDQ14
19	-	NC	59	I/O	DB2	99	-	NC	139	I/O	RDQ13
20	-	VDD	60	I/O	DB1	100	-	VDD	140	I/O	RDQ12
21	-	GND	61	I/O	DB0	101	-	GND	141	-	VDD
22	I	AB15	62	-	VDD	102	I	NA1	142	-	GND
23	I	AB14	63	-	GND	103	I	NA0	143	I/O	RDQ11
24	I	AB13	64	O	WRFRM	104	O	DSP SEL2	144	I/O	RDQ10
25	I	AB12	65	I	EXCK	105	O	DSP SEL1	145	I/O	RDQ9
26	I	AB11	66	O	SDSO	106	O	DSP SEL0	146	I/O	RDQ8
27	I	AB10	67	I	ERRF	107	I	PGMSDI	147	-	VDD
28	I	AB9	68	O	RDRFM	108	-	GND	148	-	GND
29	I	AB8	69	I	TEST3	109	O	PGMSCK	149	I/O	RDQ7
30	-	VDD	70	I	TEST2	110	O	PGMSLD	150	I/O	RDQ6
31	-	GND	71	I	TEST1	111	O	PGMSDO	151	I/O	RDQ5
32	I	AB7	72	O	RDSTS	112	I	XRDY2	152	I/O	RDQ4
33	I	AB6	73	O	WRSTS	113	I	XRDY1	153	-	VDD
34	I	AB5	74	O	TRGB1	114	I	XRDY0	154	-	GND
35	I	AB4	75	O	TRGA1	115	-	GND	155	I/O	RDQ3
36	I	AB3	76	-	GND	116	O	RAS	156	I/O	RDQ2
37	I	AB2	77	I	LRCKI	117	O	CAS	157	I/O	RDQ1
38	I	AB1	78	I	DATFRM	118	O	WE	158	I/O	RDQ0
39	I	AB0	79	-	GND	119	O	OE	159	-	GND
40	-	VDD	80	-	GND	120	-	VDD	160	-	GND

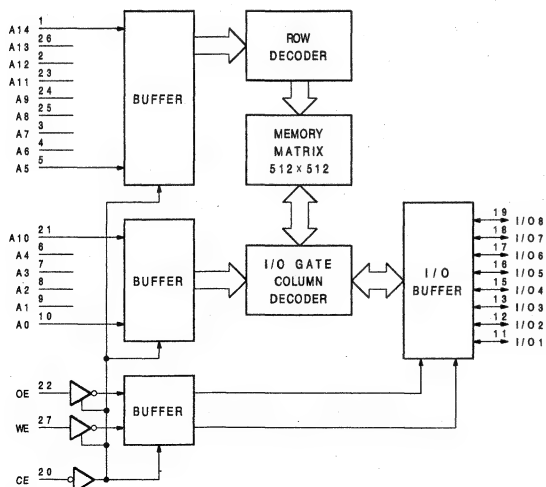
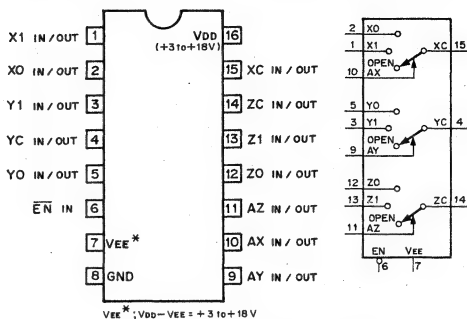
CXK58257ATM-70LL (SONY) FLAT PACKAGE

C-MOS 256k (32768 x 8)-BIT STATIC RAM
- TOP VIEW -

A0-A14 : ADDRESS INPUTS
CE : CHIP ENABLE INPUT
I/O1-I/O8 : DATA INPUTS/OUTPUTS
OE : OUTPUT ENABLE INPUT
WE : WRITE ENABLE INPUT

CE	OE	WE	MODE	I/O TERMINAL
1	x	x	NOT SELECT	HIGH IMPEDANCE
0	1	1	OUTPUT DISABLE	HIGH IMPEDANCE
0	0	1	READ	OUTPUT DATA
0	x	0	WRITE	INPUT DATA

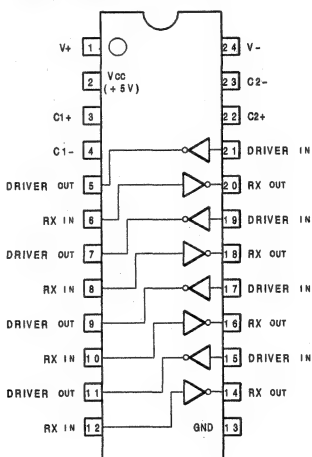
0 : LOW LEVEL
1 : HIGH LEVEL
x : DON'T CARE

HD14053BFP (HITACHI) FLAT PACKAGE
MC14053BF (MOTOROLA) FLAT PACKAGEC-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXERS/DEMULPLEXERS
- TOP VIEW -

CONT. INPUTS	ON CHANNEL
EN	A (X,Y,Z)
0	0
1	1
1	X

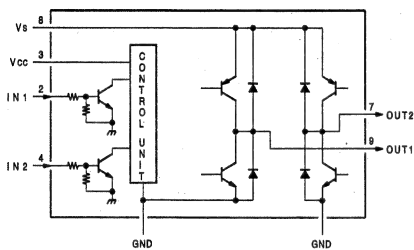
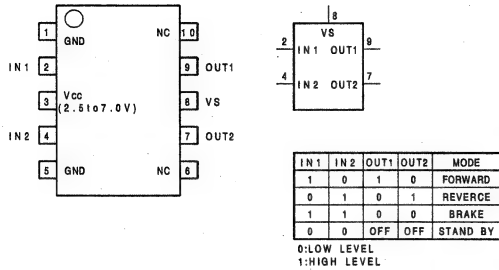
0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE.

LT1134CS (LINEAR TECH) FLAT PACKAGE

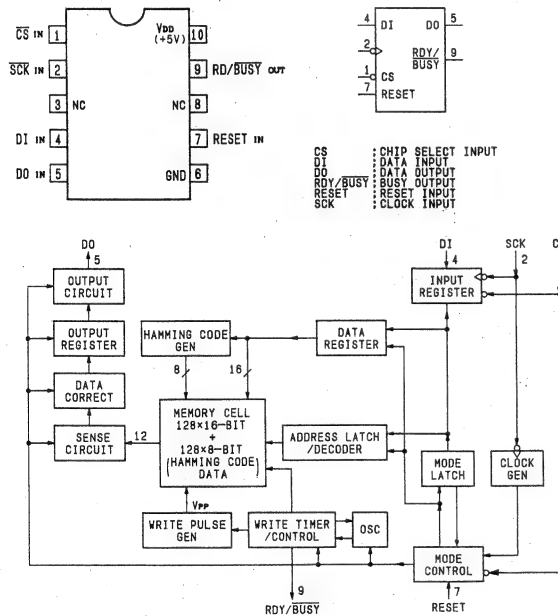
RS232C DRIVERS/RECEIVERS
- TOP VIEW -

INPUT
DRIVER IN : RS-232C DRIVER INPUTS
RX IN : RECEIVER INPUTS
OUTPUT
DRIVER OUT : RS-232C DRIVER OUTPUTS
RX OUT : RECEIVER OUTPUTS TTL/CMOS VOLTAGE LEVELS
C1+, C1-, C2+, C2- : EXTERNAL CAPACITORS
V+ : POSITIVE SUPPLY (RS-232C DRIVERS)
V- : NEGATIVE SUPPLY (RS-232C DRIVERS)

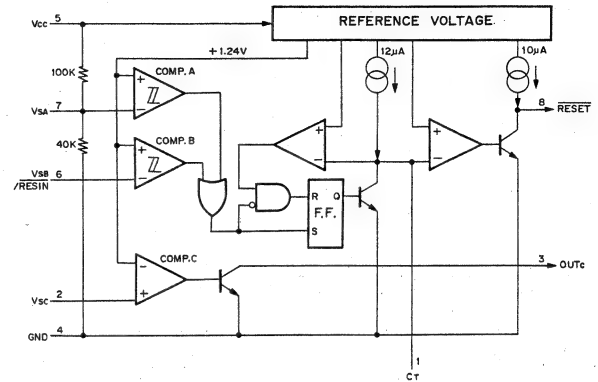
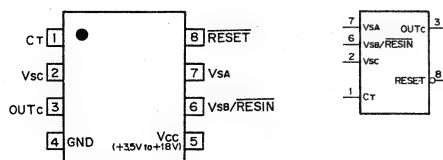
LB1638M (SANYO) FLAT PACKAGE
FORWARD/REVERSE MOTOR DRIVE
- TOP VIEW -



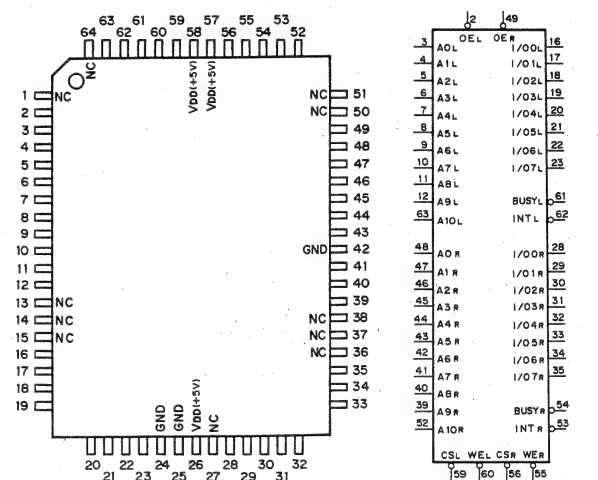
M6M80021FP (MITSUBISHI) FLAT PACKAGE
C-MOS 2k (128x16) BIT ERASABLE PROM
- TOP VIEW -



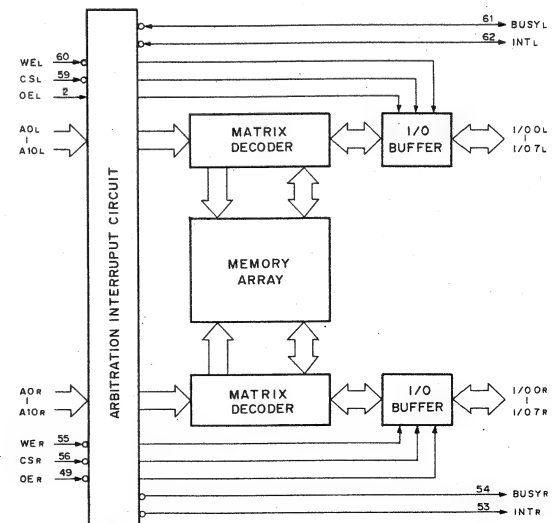
MB3771PF (FUJITSU) FLAT PACKAGE
2-WAY SUPPLY VOLTAGE SUPERVISOR
- TOP VIEW -



MB8421-90LPFQ (FUJITSU) (ACCESS TIME = 90ns) FLAT PACKAGE
C-MOS 16384 (2Kx8) BIT DUAL PORT STATIC RAM
- TOP VIEW -

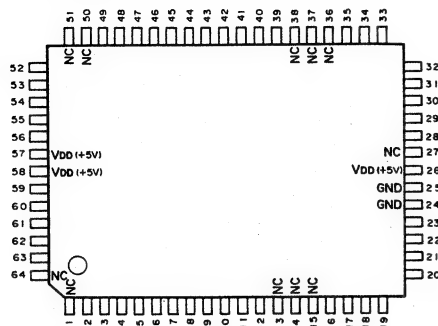


A0L - A10L, A0R - A10R: ADDRESS INPUTS
 I/O0L - I/O7L, I/O0R - I/O7R: DATA INPUTS/OUTPUTS
 CSL, CSR: CHIP SELECT INPUT
 WEL, WER: WRITE ENABLE INPUT
 OEL, OER: OUTPUT ENABLE INPUT
 BUSYL, BUSYR: BUSY OUTPUT
 INTL, INTR: INTERRUPT OUTPUT

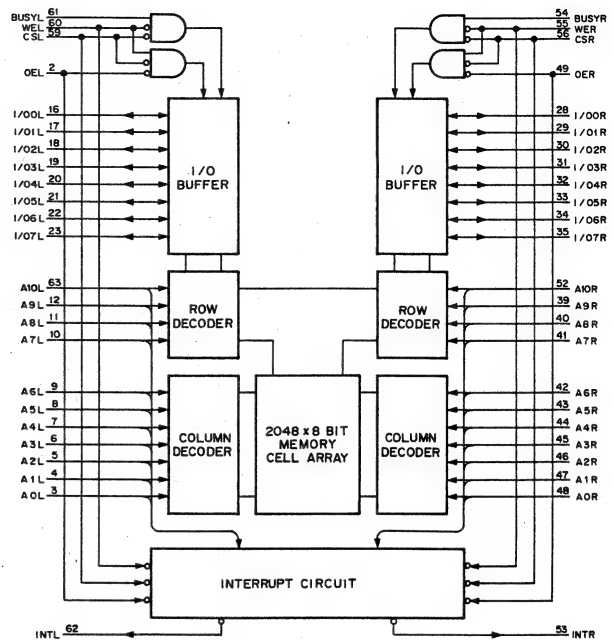


MB8431-90LPFQ (FUJITSU)

C-MOS 16K (2048x8)-BIT DUAL PORT STATIC RAM
- TOP VIEW -

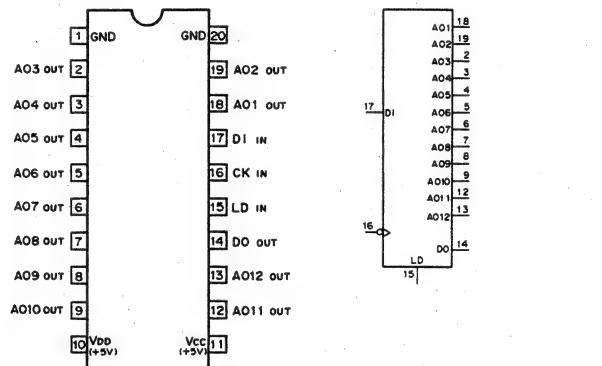


PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	-	NC	17	I/O	I/O1L	33	I/O	I/O5R	49	I	OER
2	I	OEL	18	I/O	I/O2L	34	I/O	I/O6R	50	-	NC
3	I	A0L	19	I/O	I/O3L	35	I/O	I/O7R	51	-	NC
4	I	A1L	20	I/O	I/O4L	36	-	NC	52	I	A10R
5	I	A2L	21	I/O	I/O5L	37	-	NC	53	O	INTR
6	I	A3L	22	I/O	I/O6L	38	-	NC	54	I	BUSYR
7	I	A4L	23	I/O	I/O7L	39	I	A9R	55	I	WER
8	I	A5L	24	-	GND	40	I	A8R	56	I	CSR
9	I	A6L	25	-	GND	41	I	A7R	57	-	VDD
10	I	A7L	26	-	VDD	42	I	A6R	58	-	VDD
11	I	A8L	27	-	NC	43	I	A5R	59	I	CSL
12	I	A9L	28	I/O	I/O0R	44	I	A4R	60	I	WEL
13	-	NC	29	I/O	I/O1R	45	I	A3R	61	I	BUSYL
14	-	NC	30	I/O	I/O2R	46	I	A2R	62	O	INTL
15	-	NC	31	I/O	I/O3R	47	I	A1R	63	I	A10L
16	I/O	I/O0L	32	I/O	I/O4R	48	I	A0R	64	-	NC

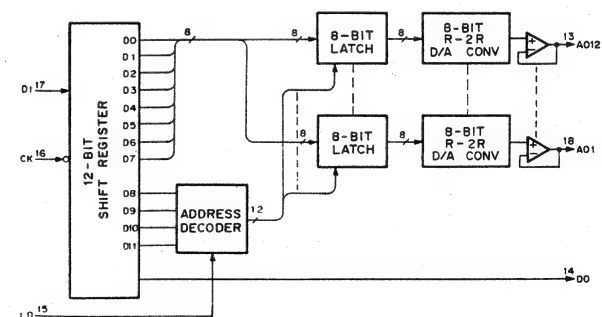


MB88346BPFV (FUJITSU) FLAT PACKAGE (SMALL)

C-MOS 8-BIT D/A CONVERTER
- TOP VIEW -



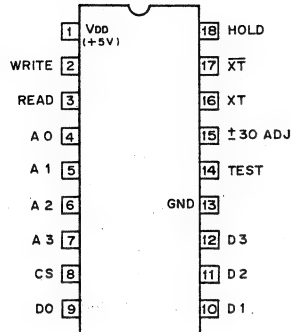
A01 - A012 : 8-BIT D/A OUTPUTS
CK : CLOCK INPUT
DI : SERIAL DATA INPUT
DO : DATA OUTPUT
LD : DATA LOAD CONTROL INPUT (H: LOAD)



MSM5832RS

MICROPROCESSOR REAL TIME CLOCK

- TOP VIEW -



	ADDRESS				DATA I/O				
	A0	A1	A2	A3	D0	D1	D2	D3	COUNT
SEC.	0	0	0	0	*	*	*	*	0~9
MIN.	0	1	0	0	*	*	*	*	0~5
HOUR	0	0	1	0	*	*	*	*	0~5
WEEK	0	1	1	0	*	*	*	*	0~6
DAY	0	0	0	1	*	*	*	*	0~3
MONTH	0	1	0	1	*	*	*	*	0~1
YEAR	0	0	1	1	*	*	*	*	0~9

Regarding Do to D3

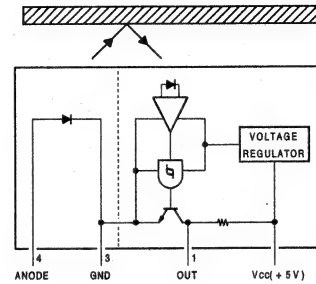
*: 0 or 1

⊙: Bit for AM/PM, 12H/24H, leap year (0 or 1)

BLANK: No Bit

NJL5803K-F10

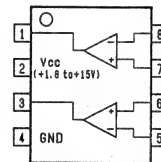
- TOP VIEW -



NJM2073M (JRC)

DUAL OPERATIONAL AMPLIFIER

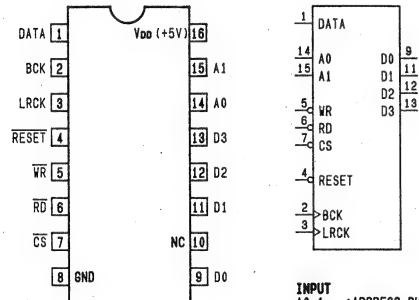
- TOP VIEW -



MSM6338MS-K (OKI)

C-MOS DIGITAL AUDIO PEAK LEVEL DETECTOR

- TOP VIEW -



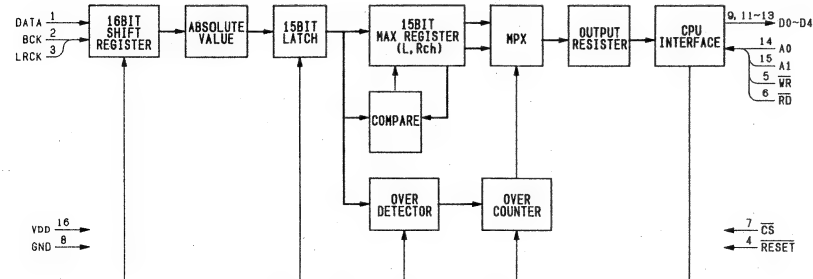
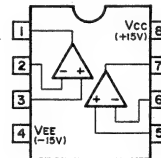
INPUT
A0, 1 : ADDRESS BUS
BCK : BIT CLOCK
DATA : AUDIO SERIAL DATA
LRCK : LR CLOCK
CS : CHIP SELECT
RESET : RESET
RD : DATA READ
WR : DATA WRITE
INPUT/OUTPUT
D0~4 : DATA BUS

NJM4556M-A (JRC) FLAT PACKAGE

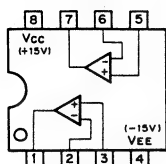
OPERATIONAL AMPLIFIER

(WIDE BAND, DECOMPENSATED)

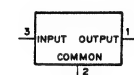
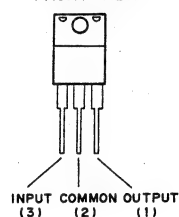
- TOP VIEW -



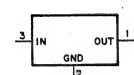
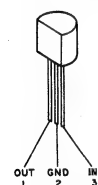
NJM4560M (JRC) FLAT PACKAGE
DUAL OPERATIONAL AMPLIFIER
- TOP VIEW -



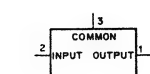
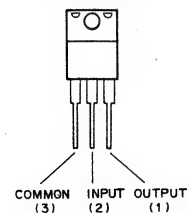
NJM7805FA (JRC) + 5V
NJM7809FA (JRC) + 9V
XRA17809T (EXAR) + 9V
POSITIVE VOLTAGE REGULATOR (500mA)
- FRONT VIEW -



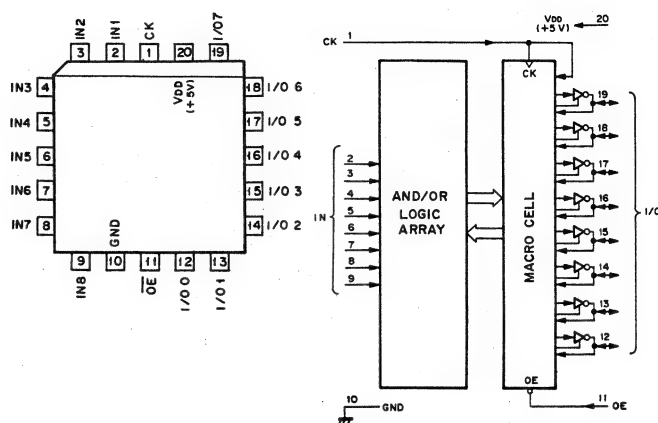
NJM78L05A (JRC) + 5V (100mA)
POSITIVE VOLTAGE REGULATOR



NJM7905FA (JRC) - 5V
NJM7909FA (JRC) - 9V
NEGATIVE VOLTAGE REGULATOR (500mA)
- FRONT VIEW -

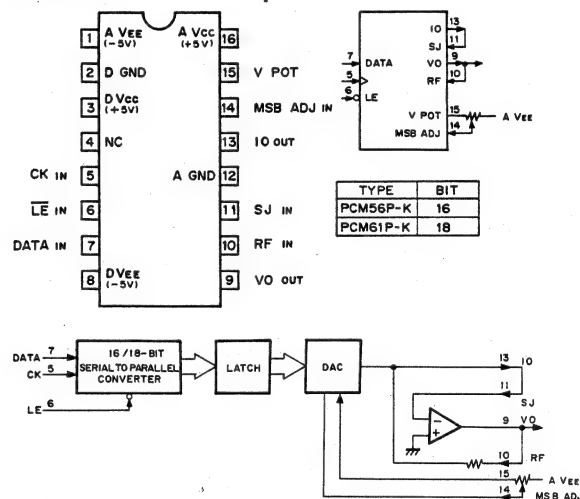


PALCE16V8Q-25JC (AMD)
C-MOS ELECTRICALLY ERASABLE PROGRAMMABLE LOGIC DEVICE
- TOP VIEW -



* ABOVE DIAGRAM SHOWS CONDITIONS BEFORE PROGRAMMING.

PCM56P (BURR-BROWN)
SERIAL INPUT D/A CONVERTER FOR DIGITAL AUDIO
- TOP VIEW -

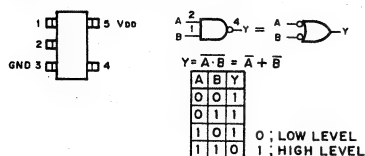


DATA ; SERIAL DATA INPUT MSB FIRST
BINARY 2's COMPLEMENT
CK ; CLOCK INPUT, $\overline{\text{S}}$
LE ; LATCH ENABLE, $\overline{\text{L}}$
IO ; CURRENT OUTPUT
SJ ; SUMMING JUNCTION
VO ; VOLTAGE OUTPUT
RF ; FEEDBACK RESISTOR
VPOT ; MSB TRIM POTENTIOMETER
MSB ADJ ; MSB ADJUSTMENT

DIGITAL INPUT BTC (HEX)	PCM561-K	DAC OUTPUT	VO (V)	IO (mA)
7FFF	7FFFFFFF	+FULL SCALE	+2.999908	-0.999970
8000	80003F	-FULL SCALE	-3.000092	+1.000030
0000	00003F	BIPOLAR ZERO	0.000000	0.000000
FFFF	FFFFFF	ZERO-1LSB	-0.000092	+0.030500 μ A

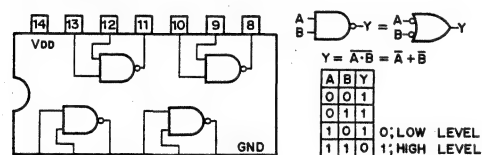
BTC : BINARY TWO'S COMPLEMENT

SC7S00F (MOTOROLA) CHIP PACKAGE
TC7S00F (TOSHIBA) CHIP PACKAGE
C-MOS 2-INPUT NAND GATE



TYPE	V _{DD}
7S00F	+2 to +6V
4S11F	+3 to +18V
4SU11F	

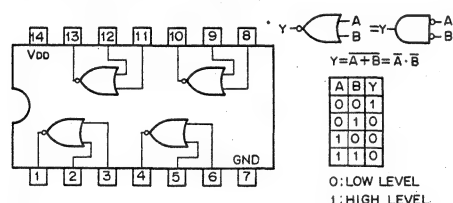
SN74HC00ANS (TI) FLAT PACKAGE
C-MOS QUAD 2-INPUT NAND GATES
- TOP VIEW -



NOTE:

TYPE	V _{DD}
TC74AC00 TYPE TC74VHC00	+2 to +5.5V
MC74HCT00N	+5V
74ACT00 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

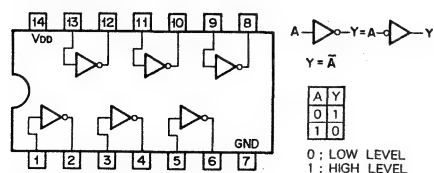
SN74HC02ANS (TI) FLAT PACKAGE
C-MOS QUAD 2-INPUT NOR GATES
- TOP VIEW -



NOTE:

TYPE	V _{DD}
TC74AC02F	+2 to +5.5V
74ACT02SJ TC74ACT02F	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

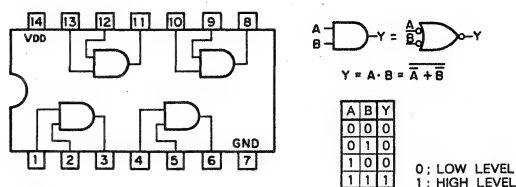
SN74HC04ANS (TI) FLAT PACKAGE
SN74HCU04ANS (TI) FLAT PACKAGE
C-MOS HEX INVERTERS
- TOP VIEW -



NOTE:

TYPE	V _{DD}
74HCT04 TYPE	+5V
TC74AC04 TYPE TC74VHC04 TYPE	+2 to +5.5V
74ACT04 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

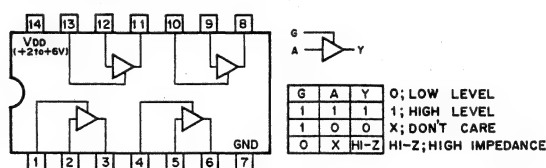
SN74HC08ANS (TI) FLAT PACKAGE
C-MOS QUAD 2-INPUT AND GATES
- TOP VIEW -



NOTE:

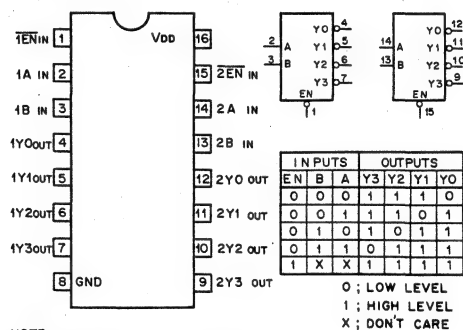
TYPE	V _{DD}
TC74AC08F MC74ACT08M	+2 to +5.5V
TC40H	+2 to +8V
OTHER TYPES	+2 to +6V

SN74HC126ANS (TI) FLAT PACKAGE
C-MOS BUS BUFFER GATE WITH 3-STATE OUTPUT
- TOP VIEW -



SN74HC139ANS (TI) FLAT PACKAGE

C-MOS DUAL 2-TO-4 DECODER/DEMULPLEXER
- TOP VIEW -

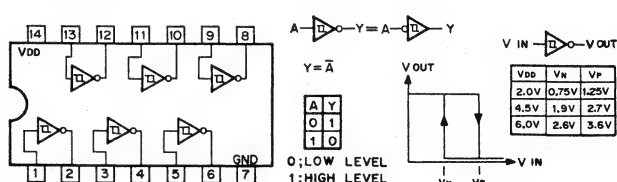


NOTE:

TYPE	V _{DD}
74AC/74HC	+2 to +6V
74ACT	+5V
TC74AC139	+2 to +5.5V

SN74HC14ANS (TI) FLAT PACKAGE

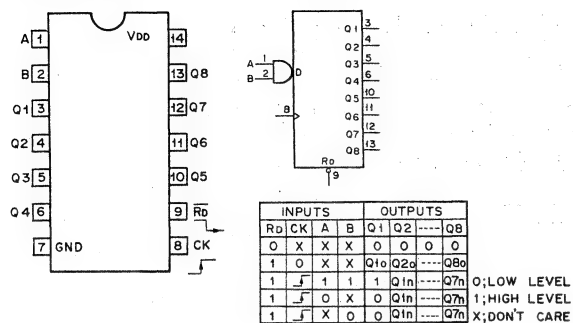
C-MOS HEX SCHMITT TRIGGER INVERTERS
- TOP VIEW -



NOTE:

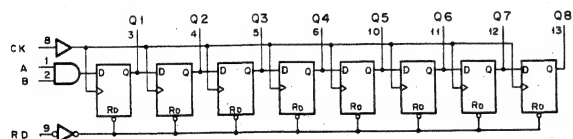
TYPE	V _{DD}
TC74AC14 TYPE	+2 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC164ANS (TI) FLAT PACKAGE
C-MOS 8-BIT SERIAL-IN/PARALLEL-OUT SHIFT REGISTER
- TOP VIEW -

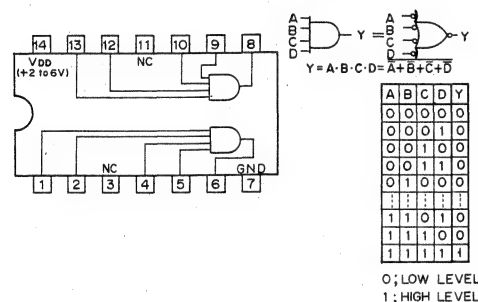


NOTE:

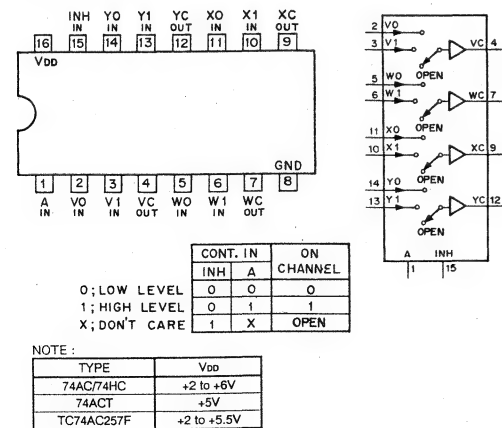
TYPE	V _{DD}
TC74AC164 TYPE	+2 to +5.5V
OTHER TYPES	+2 to +6V



SN74HC21ANS (TI) FLAT PACKAGE
C-MOS DUAL 4-INPUT POSITIVE AND GATE
- TOP VIEW -



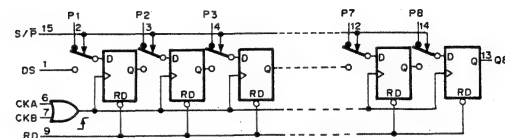
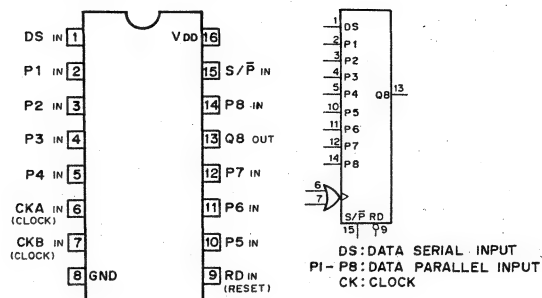
SN74HC257ANS (TI) FLAT PACKAGE
C-MOS 2-LINE-TO-1-LINE DATA SELECTOR/MULTIPLEXER
- TOP VIEW -



NOTE:

TYPE	V _{DD}
74AC/74HC	+2 to +6V
74ACT	+5V
TC74AC257F	+2 to +5.5V

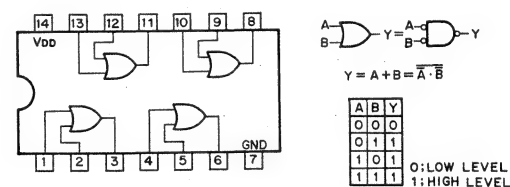
SN74HC166ANS (TI) FLAT PACKAGE
C-MOS 8-BIT SHIFT REGISTER
- TOP VIEW -



NOTE:

TYPE	V _{DD}
TC40H	+2 to +8V
OTHERS	+2 to +6V

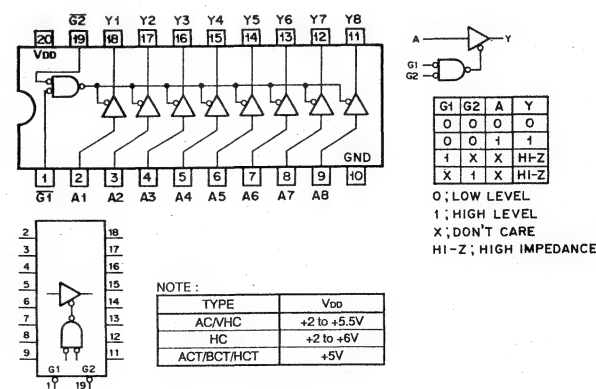
SN74HC32ANS (TI) FLAT PACKAGE
C-MOS QUAD 2-INPUT OR GATES
- TOP VIEW -



NOTE:

TYPE	V _{DD}
TC74AC32 TYPE	+2 to +5.5V
OTHER TYPES	+2 to +6V

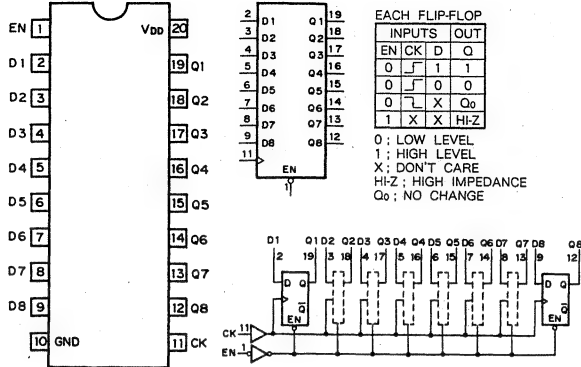
SN74HC541ANS (TI) FLAT PACKAGE
C-MOS BUFFERS AND LINE DRIVERS WITH 3-STATE OUTPUTS
- TOP VIEW -



NOTE:

TYPE	V _{DD}
ACM/HCT	+2 to +5.5V
HCT	+2 to +6V
ACT/BCT/HCT	+5V

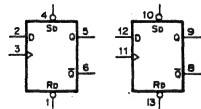
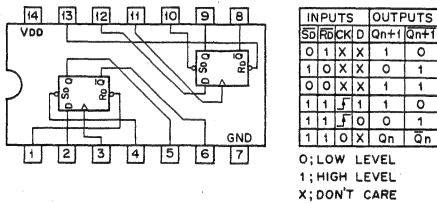
SN74HC574ANS (TI) FLAT PACKAGE
C-MOS 3-STATE D-TYPE EDGE-TRIGGERED FLIP-FLOP
- TOP VIEW -



NOTE:

TYPE	VDD
74AC/74HC	+2 to +5V
74ACT/74FCT/74HCT	+5V
TC74ACS74F TC74VHC574	+2 to +5.5V

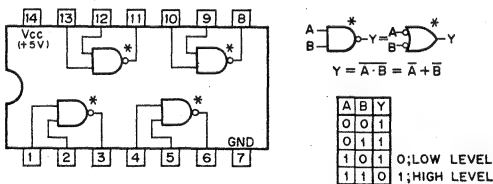
SN74HC74ANS (TI) FLAT PACKAGE
C-MOS DUAL D-TYPE FLIP-FLOPS WITH DIRECT SET/RESET
- TOP VIEW -



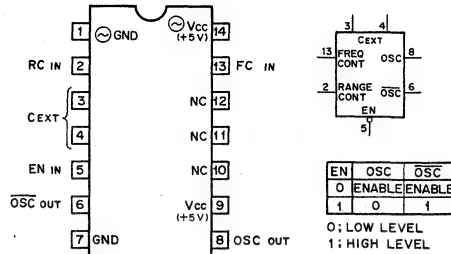
NOTE:

TYPE	VDD
TC74HCT74AF	+5V
TC74AC74 TYPE	+2 to +5.5V
74ACT74 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

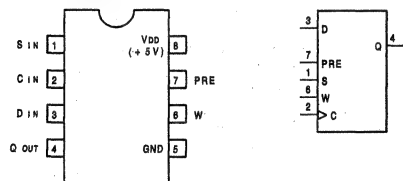
SN74LS03NS (TI) FLAT PACKAGE
TTL 2-INPUT POSITIVE-NAND GATE WITH OPEN-COLLECTOR
- TOP VIEW -



SN74LS624NS (TI) FLAT PACKAGE
TTL VOLTAGE CONTROLLED OSCILLATOR
- TOP VIEW -



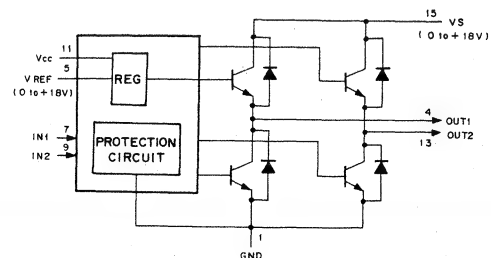
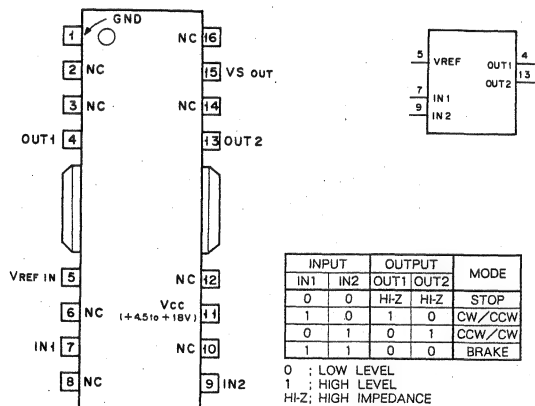
ST93CS56M1 (SGS-THOMSON MICRO ELECTRONICS) FLAT PACKAGE
C-MOS SERIAL ACCESS 2k (128 x 16)-BIT EEPROM
- TOP VIEW -



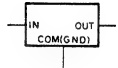
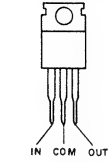
INPUT
C : SERIAL CLOCK
D : SERIAL DATA
PRE : PROTECT ENABLE
S : CHIP SELECT
W : WRITE ENABLE

OUTPUT
Q : SERIAL DATA

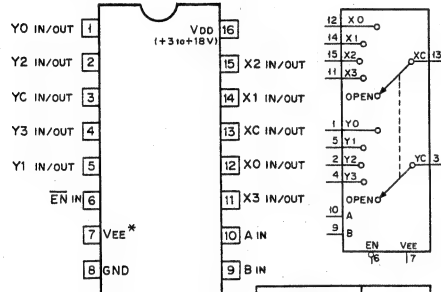
TA7291F (TOSHIBA) FLAT PACKAGE
DC MOTOR FULLBRIDGE DRIVER
- TOP VIEW -



TA7809S (TOSHIBA) +9V
POSITIVE VOLTAGE REGULATOR (0.5A)
- SIDE VIEW -



TC4052BFHB (TOSHIBA) FLAT PACKAGE
C-MOS DUAL 4-CHANNEL ANALOG MULTIPLEXERS/DEMULTIPLEXERS
- TOP VIEW -

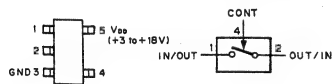


V_{EE}*: V_{DD} - V_{EE} = +3 to +18V

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

CONTROL INPUTS				"ON" CHANNEL
EN	B	A		
0	0	0	0	0
0	0	1	1	1
0	1	0	2	2
0	1	1	3	3
1	X	X	X	OPEN

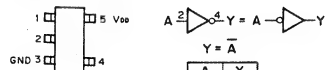
TC4S66F (TOSHIBA) CHIP PACKAGE
C-MOS BILATERAL ANALOG SWITCH



CONT	SWITCH
0	OFF
1	ON

0; LOW LEVEL
1; HIGH LEVEL

TC7SU04F (TOSHIBA) CHIP PACKAGE
C-MOS INVERTER

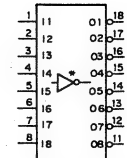
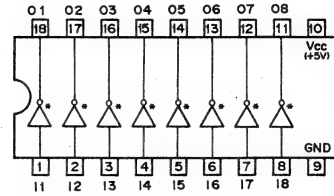


A	Y
0	1
1	0

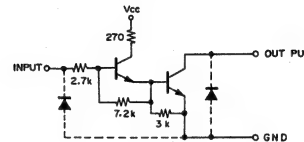
0; LOW LEVEL
1; HIGH LEVEL

TYPE	V _{DD}
7SU04F	+2 to +6V
7SU04F	+2 to +6V
4S69F	+3 to +18V
4SU69F	+3 to +18V

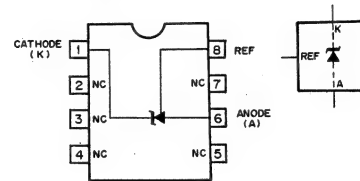
TD62381F (TOSHIBA) FLAT PACKAGE
OCTAL LOW SATURATION DRIVER
- TOP VIEW -



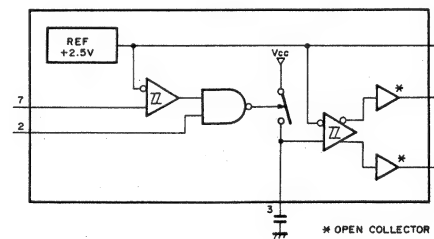
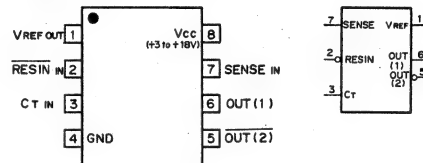
*; OPEN COLLECTOR



TL431CPS (TI) FLAT PACKAGE
ADJUSTABLE PRECISION SHUNT REGULATOR
- TOP VIEW -

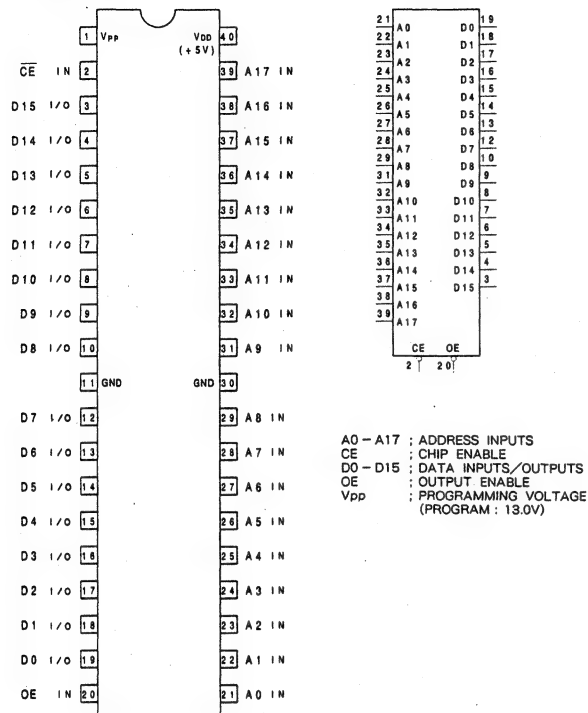


TL7705CPS-B (TI) FLAT PACKAGE
POWER VOLTAGE SUPERVISOR
- TOP VIEW -

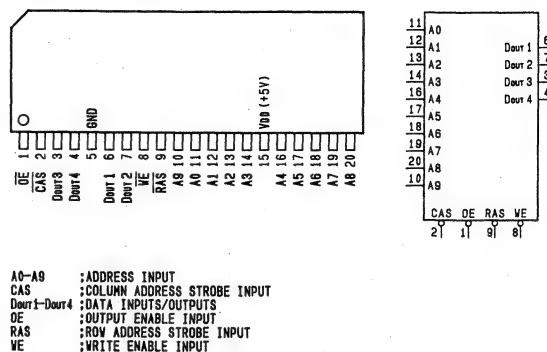


* OPEN COLLECTOR

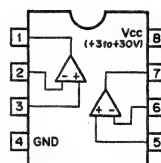
TMS27C240-12JL (TI)

C-MOS 4M (262k X 16)-BIT UV EPROM
- TOP VIEW -

TMS44400-80SD (TI) (ACCESS TIME = 80ns)

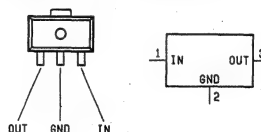
C-MOS 4M (1,048,576x4)-BIT DYNAMIC RAM (ZIP PACKAGE)
- SIDE VIEW -

UPC358G2 (NEC) FLAT PACKAGE

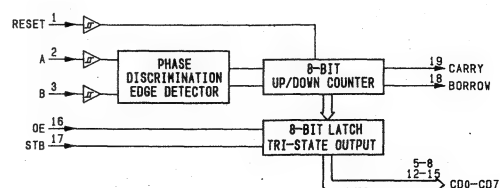
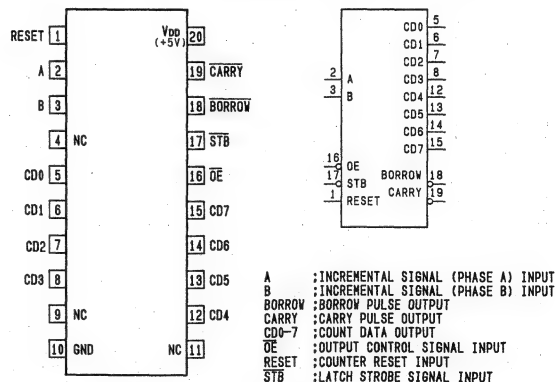
DUAL OPERATIONAL AMPLIFIERS
- TOP VIEW -

UPC78L05T (NEC) + 5V

POSITIVE VOLTAGE REGULATOR (100mA)



UPD4702G (NEC)

C-MOS INCREMENTAL ENCODER 8BIT UP DOWN COUNTER
- TOP VIEW -

ABOVE DIAGRAM SHOWS CONDITIONS BEFORE PROGRAMMING.

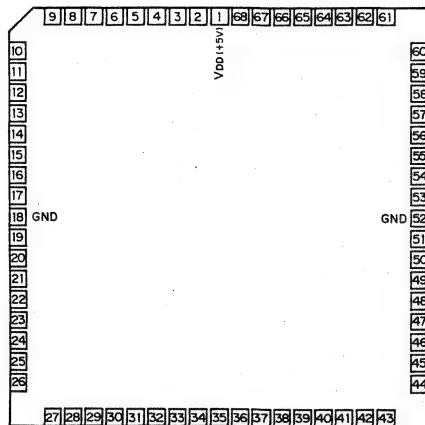
CE	OE	Vpp	Vdd	A9	A0	D0 - D15	FUNCTION
0	0	Vdd	Vdd	X	X	Dout	READ
0	1	Vdd	Vdd	X	X	HI-Z	OUTPUT DISABLE
0	1	Vpp	Vdd	X	X	Din	PROGRAMMING
1	0	Vpp	Vdd	X	X	Dout	VERIFY
1	1	Vpp	Vdd	X	X	HI-Z	PROGRAM INHIBIT
1	X	Vdd	Vdd	X	X	HI-Z	STANDBY
0	0	Vdd	Vdd	VH	0	97 (MAKER CODE)	SIGNATURE MODE
				VH	1	30 (DEVICE CODE)	

1 : HIGH LEVEL
0 : LOW LEVEL
X : DON'T CARE
HI-Z : HIGH IMPEDANCE
VH : 12.0 ± 0.5 V

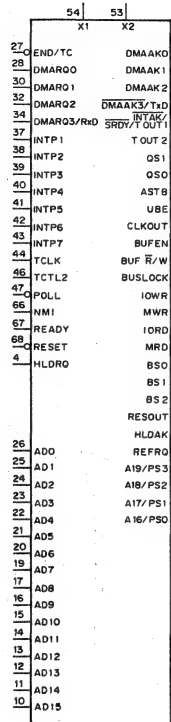
UPD70216L (NEC)

C-MOS 16 BIT MICROPROCESSOR

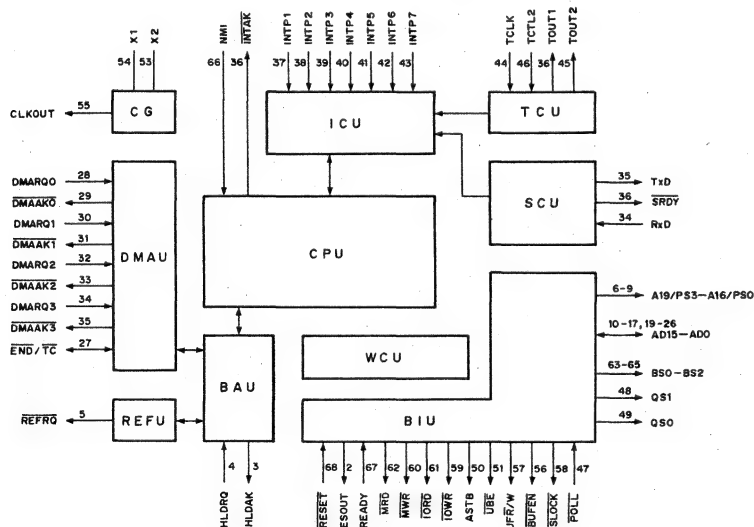
- TOP VIEW -



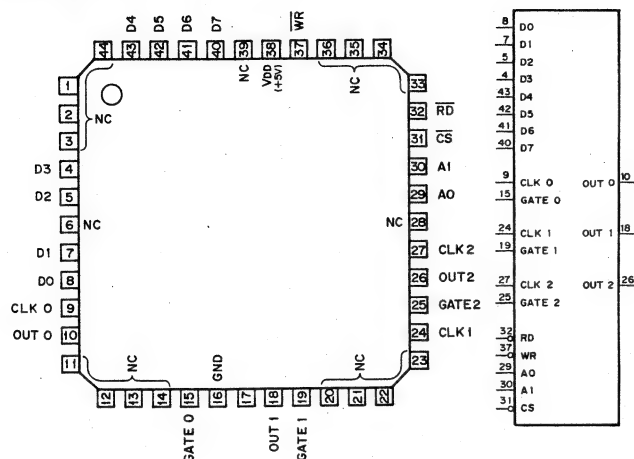
PIN NO.	FUNCTION	PIN NO.	FUNCTION	PIN NO.	FUNCTION	PIN NO.	FUNCTION
1	VDD(+5V)	18	GND	35	DMAAK3/TxD	52	GND
2	RES OUT	19	AD7	36	INTAK/SRDY/TOUT1	53	X 2
3	HLDK	20	AD6	37	INTP 1	54	X 1
4	HLDRO	21	AD5	38	INTP 2	55	CLK OUT
5	REFRQ	22	AD4	39	INTP 3	56	BUFEN
6	A19/PS3	23	AD3	40	INTP 4	57	BUFR/W
7	A18/PS2	24	AD2	41	INTP 5	58	BUSLOCK
8	A17/PS1	25	AD1	42	INTP 6	59	IOWR
9	A16/PS0	26	AD0	43	INTP 7	60	MWR
10	AD15	27	END/TC	44	TCLK	61	IORD
11	AD14	28	DMAK0	45	TOUT2	62	MRD
12	AD13	29	DMAAK0	46	TCTL2	63	BS0
13	AD12	30	DMAK1	47	POLL	64	BS1
14	AD11	31	DMAAK1	48	Q01	65	BS2
15	AD10	32	DMAK2	49	Q00	66	NM1
16	AD9	33	DMAAK2	50	ASTB	67	READY
17	AD8	34	DMAK3/RxD	51	UBE	68	RESET



A16/PS0-A19/PS3 (O) ; ADDRESS/PROCESSOR STATUS
 AD0-AD15 (I/O) ; ADDRESS BUS/DATA BUS
 ASTB (O) ; ADDRESS STROBE
 BS0-BS2 (O) ; BUS STATUS
 BUFEN (O) ; BUFFER ENABLE
 BUFR/W (O) ; BUFFER READ/WRITE
 BUSLOCK (O) ; BUS LOCK
 CLKOUT (O) ; CLOCK OUTPUT
 DMAAK0-2 (O) ; DMA ACKNOWLEDGE 0-2
 DMAAK3/TxD (O) ; DMA ACKNOWLEDGE3/TRANSMIT DATA
 DMAK0-2 (I) ; DMA REQUEST 0-2
 DMAK3/RxD (I) ; DMA REQUEST/RECEIVE DATA
 END/TC (I/O) ; END/TERMINAL COUNT
 HLDK (O) ; BUS HOLD ACKNOWLEDGE
 HLDRO (I) ; BUS HOLD REQUEST
 INTAK/SRDY/TOUT1 (O) ; INTERRUPT ACKNOWLEDGE/SERIAL
 READY/TIMER OUT 1 (I) ; INTERRUPT REQUEST FROM
 INTPO-INTP7 (I) ; PERIPHERAL 0-7
 IORD (O) ; I/O READ STROBE
 IOWR (O) ; I/O WRITE STROBE
 MRD (O) ; MEMORY READ STROBE
 MWR (O) ; MEMORY WRITE STROBE
 NM1 (I) ; NON MASKABLE INTERRUPT
 POLL (I) ; POLL
 Q00, Q01 (O) ; QUEUE STATUS
 READY (I) ; READY
 REFRQ (O) ; REFRESH REQUEST
 RESET (I) ; RESET
 RES OUT (O) ; SYSTEM RESET
 TCLK (I) ; TIMER CLOCK
 TCTL2 (I) ; TIMER CONTROL 2
 TOUT2 (O) ; TIMER OUT 2
 UBE (O) ; UPPER BYTE ENABLE
 X1, 2 (I) ; CRYSTAL 1,2



UPD71054GB-10-3B4 (NEC) FLAT PACKAGE
CMOS PROGRAMMABLE TIMER COUNTER
- TOP VIEW -



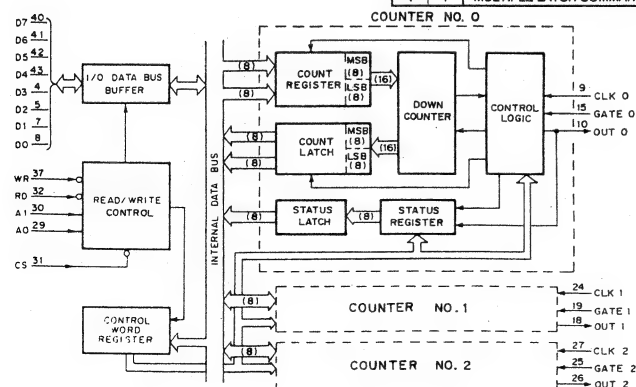
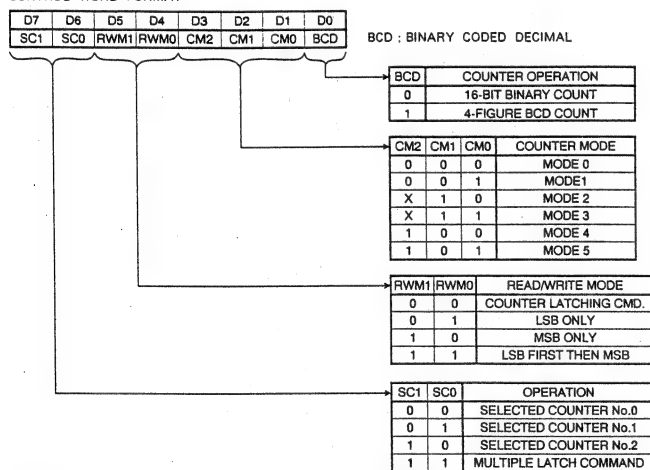
FUNCTION TABLE

CS	RD	WR	A1	AO	FUNCTION
0	1	0	0	0	COUNTER NO.1 WRITE
0	1	0	0	1	COUNTER NO.2 WRITE
0	1	0	1	0	COUNTER NO.3 WRITE
0	1	0	1	1	CONTROL WORD WRITE
0	0	1	0	0	COUNTER NO.1 READ
0	0	1	0	1	COUNTER NO.2 READ
0	0	1	1	0	COUNTER NO.3 READ
0	0	1	1	1	NO-OPERATION (HI-Z)
1	X	X	X	X	DISABLE (HI-Z)
0	1	1	X	X	NO-OPERATION (HI-Z)

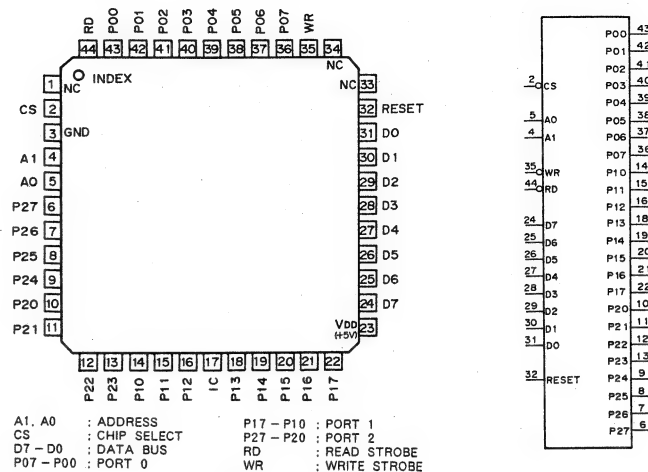
A1,A0 : SELECTED READ/WRITE OPERATION
CLK n : COUNTER CLOCK INPUT n
CS : CHIP SELECT
D7-D0 : 8-BIT DATA I/O
GATE n : COUNTER GATE INPUT n
IC : INTERNALLY CONNECTED
OUT n : COUNTER CLOCK OUTPUT n
RD : READ COUNTER/STATUS
WR : WRITE COMMAND/DATA

0: LOW LEVEL
1: HIGH LEVEL
X: DON'T CARE
HI-Z: HIGH IMPEDANCE

CONTROL WORD FORMAT



UPD71055GB-10-3B4 (NEC) FLAT PACKAGE
CMOS PARALLEL INTERFACE UNIT
- TOP VIEW -

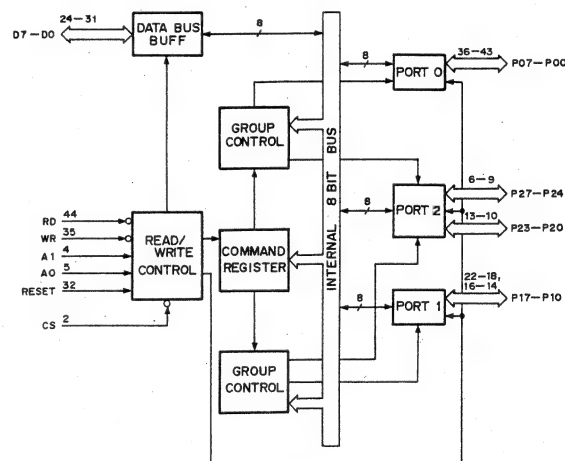


A1, A0 : ADDRESS
CS : CHIP SELECT
D7-D0 : DATA BUS
P07-P00 : PORT 0
P17-P10 : PORT 1
P27-P20 : PORT 2
RD : READ STROBE
WR : WRITE STROBE

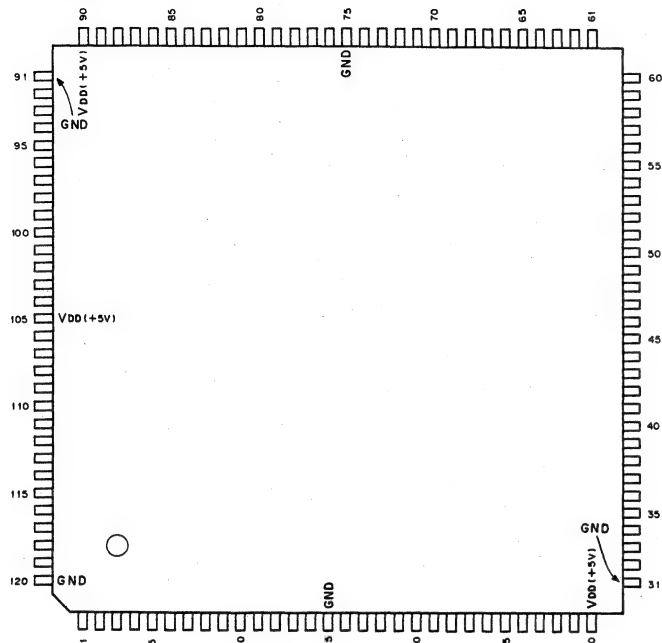
IC : INTERNALLY CONNECTED

CS	RD	WR	A1	AO	OPERATION	CPU ACTION
0	0	1	0	0	PROTO → DATA-BUS	INPUT
0	0	1	0	1	PROT 1 → DATA-BUS	INPUT
0	0	1	1	0	PROT 2 → DATA-BUS	INPUT
0	0	1	1	1	DISABLE	
0	0	0	X	X		
0	1	0	0	0	DATA-BUS → PROTO	OUTPUT
0	1	0	0	1	DATA-BUS → PROT 1	OUTPUT
0	1	0	1	0	DATA-BUS → PROT 2	OUTPUT
0	1	0	1	1	DATA-BUS → COMMAND REGISTER	OUTPUT
0	1	1	X	X	HIGH IMPEDANCE	

0: LOW LEVEL
1: HIGH LEVEL
X: DON'T CARE



UPD71101GD-10-5BB (NEC)

C-MOS ENCAPSULATED PERIPHERAL
- TOP VIEW -(V_{DD} = +5V)

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I/O	P27	41	I/O	SA11	81	I	RXCLK0
2	I/O	P26	42	I/O	SA12	82	I	RXDATA0
3	I/O	P25	43	I/O	SUB/(BUFR/W) 1	83	I/O	SYNC/BRK0
4	I/O	P24	44	O	INT1	84	O	RXRDY0
5	I/O	P23	45	I	INTP17	85	O	TXRDY0
6	I/O	P22	46	I	INTP16	86	O	TXDATA0
7	I/O	P21	47	I	INTP15	87	O	TXEMP0
8	I/O	P20	48	I	INTP14	88	O	RTS0
9	I/O	P10	49	I	INTP13	89	O	DTR0
10	I/O	P11	50	I	INTP12	90	-	V _{DD}
11	I/O	P12	51	I	INTP11	91	-	GND
12	I/O	P13	52	I	INTP10	92	I/O	D7
13	I/O	P14	53	I	INTAK1	93	I/O	D6
14	I/O	P15	54	I	CS1	94	I/O	D5
15	-	GND	55	I	CS10	95	I/O	D4
16	I/O	P16	56	I	INTAK0	96	I/O	D3
17	I/O	P17	57	I	INTPO7	97	I/O	D2
18	I	CSB	58	I	INTPO6	98	I/O	D1
19	I	BCLK	59	I	INTPO5	99	I/O	D0
20	I	RXDATA1	60	I	INTPO4	100	I	GATE0
21	I	TXCLK1	61	I	INTPO3	101	I	TCLK0
22	I	CS1	62	I	INTPO2	102	I	GATE1
23	I	CTST	63	I	INTPO1	103	O	OUT0
24	I	SCLK1	64	I	INTPO0	104	I	TCLK0
25	I	DSR1	65	O	INT0	105	-	V _{DD}
26	I	RXCLK1	66	I/O	SUB/(BUFR/W) 0	106	I	GATE1
27	O	RXRDY1	67	I/O	SA02	107	O	OUT1
28	O	TXRDY1	68	I/O	SA01	108	I	TCLK2
29	I/O	SYNC/BRK1	69	I/O	SA00	109	I	GATE2
30	-	V _{DD}	70	I	WR	110	O	OUT2
31	-	GND	71	I	RD	111	I/O	PO7
32	O	RXBLOCK	72	I	A0	112	I/O	PO6
33	O	RXACLOCK	73	I	A1	113	I/O	PO5
34	O	TXBLOCK	74	I	RESET	114	I/O	PO4
35	O	TXACLOCK	75	-	GND	115	I/O	PO3
36	O	TXDATA1	76	I	CS0	116	I/O	PO2
37	O	TXEMP1	77	I	TXCLK0	117	I/O	PO1
38	O	RTS1	78	I	CTS0	118	I/O	PO0
39	O	DTR1	79	I	SCLK0	119	I	CSP
40	I/O	SA10	80	I	DSR0	120	-	GND

76	CS0	D0	99
75	CS1	D1	98
74	CS2	D2	97
73	CS3	D3	96
72	CS4	D4	95
71	CS5	D5	94
70	CS6	D6	93
69	CS7	D7	92
68	WR	INT0	65
67	RD	INT1	44
66	A0	OUT0	103
65	A1	OUT1	107
64	INTAK0	OUT2	110
63	INTAK1	TXDATA0	86
62	SUB0	DTR0	89
61	SUB1	RTS0	88
60	GATE0	RXDATA0	87
59	GATE1	TXRDY0	85
58	GATE2	TXEMP0	87
57	TCLK0	RXRDY0	84
56	TCLK1	TXDATA1	36
55	TCLK2	DTR1	38
54	SCLK0	RTS1	35
53	TXCLK0	TXRDY1	28
52	RXCLK0	TXEMP1	37
51	SYNC/BRK0	RXRDY1	27
50	SCLK1	PO0	118
49	TXCLK1	PO1	117
48	RXCLK1	PO2	116
47	SYNC/BRK1	PO3	115
46	TXACLOCK	PO4	114
45	RXACLOCK	PO5	113
44	TXBLOCK	PO6	112
43	RXBLOCK	PO7	111
42	BCLK	PO0	9
41	INTPO0	PO1	10
40	INTPO1	PO2	11
39	INTPO2	PO3	12
38	INTPO3	PO4	13
37	INTPO4	PO5	14
36	INTPO5	PO6	15
35	INTPO6	PO7	16
34	INTPO7	PO0	17
33	INTPO8	PO1	18
32	INTPO9	PO2	19
31	INTP10	PO3	20
30	INTP11	PO4	21
29	INTP12	PO5	22
28	INTP13	PO6	23
27	INTP14	PO7	24
26	INTP15	PO0	25
25	INTP16	PO1	26
24	INTP17	PO2	27
23	DSR0	SA10	40
22	CTS0	SA11	41
21	RXDATA1	SA12	42
20	DSR1	SA00	67
19	CTS1	SA01	68
18	RESET	SA00	69

UPD71059GB-10-3B4 (NEC) FLAT PACKAGE
C-MOS INTERRUPT CONTROL UNIT
- TOP VIEW -

```

INPUT
A0, A1      : REGISTER SELECTING
BCLK        : CLOCK FOR BAUD RATE GENERATING
CSB         : BRG UNITSELECT
CSIO        : INTERRUPT CONTROL UNIT 0 SELECTE
CSINT       : INTERRUPT CONTROL UNIT 1 SELECTE
CSP         : PARALLEL INTERFACE UNIT SELECTE
CSSO        : SERIAL CONTROL UNIT 0 SELECTE
CSST        : SERIAL CONTROL UNIT 1 SELECTE
CST         : TIMER COUNTER UNIT SELECTE
CTS0, CTS1 : TRANSFER CONTROL
DSRT        : MODEM CONTROL, GENERAL PURPOSE
GATED = GATE2
INTAK0 = INTAK1
INTP00 = INTP0F
INTP10 = INTP17
RD          : READ READY
RESET       : INITIALIZED
RXCLK0, RXCLK1 : REFERENCE CLOCK FOR DECIDING RECEPTION RATE
RXDATA0, RXDATA1 : RECEIVES SERIAL DATA
SCLK0, SCLK1 : COLCK FOR SCU INTERNAL TIMING
TCLK0 = TCLK2 : CLOCK (0 TO 10MHz) FOR COUNTER RATE
TCLK0 = TCLK1 : REFERENCE CLOCK FOR TRANSFER RATE
WR         : WRITE

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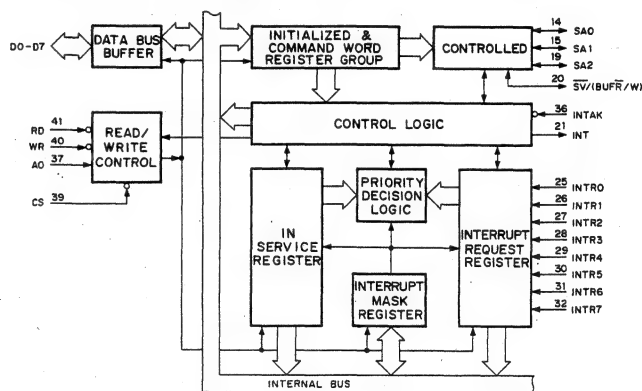
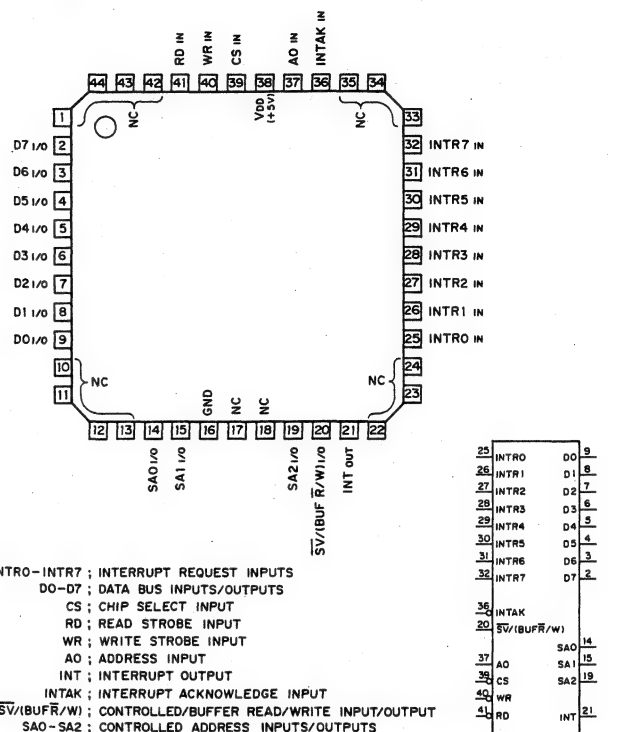
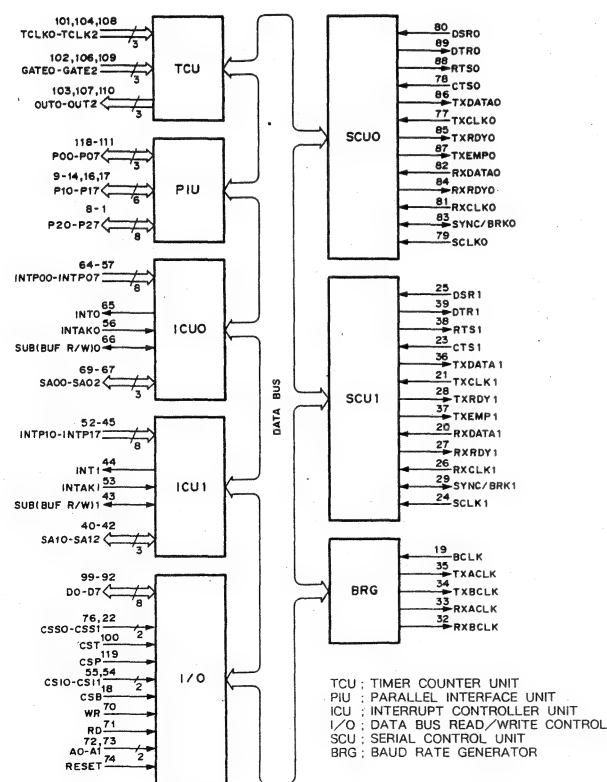
OUTPUT
DTRO, DTRT      : MODEM CONTROL/GENERAL PURPOSE
INTO, INT1       : INTERRUPTION REQUEST
                  (FROM ICU TO CPU OR MASTER ICU)
OUTO – OUT2      : COUNTER OUTPUT/INTERRUPTION REQUEST
                  FOR TCU
RTS0 – RTS1     : MODEM CONTROL/GENERAL PURPOSE
RXACK, RXACKL   : RECEIVED CLOCK OF BAND RATE GENERATOR
RXBCLK,          :
RXRDY0, RXRDY1  : READING INTERRUPTION REQUEST FOR CPU,
                  RECEIVED DATA STATUS
TXACKLOCK        : TRANSFER CLOCK OF BAND RATE GENERATOR
TXBCLK,          :
TXDATA0, TXDATA1: SERIAL DATA
TXEMP0, TXEMP1  : TRANSMITTER BUFFER AND TRANSMIT
                  DATA, BUFFER STATUS
TXRDY0, TXRDY1  : WRITING ACKNOWLEDGE/WRITING
                  INTERRUPT REQUEST FOR CPU

```

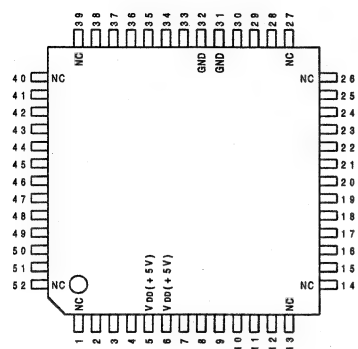
```

INPUT/OUTPUT
DO - D7          : BI-DIRECTIONAL DATA BUS OF 8-BITS TRI-STATE
SYNC/BRK0,      : SYNC IN OR OUTPUT / BRK CONDITION DETECT OUTPUT
SYNC/BRK1       : (SYNCHRONOUS MODE)
PO0 - PO7       : PORT0
PI0 - PI7       : PORT1
P20 - P27       : PORT2
SA00 - SAQ2     : ICU CONTROL OUTPUT (MASTER MODE)
SA10 - SA12     : ICU CONTROL INPUT (SUB MODE)
SUB/(BUF R/W) 1 : SUB/MASTER SELECT (NO-BUFFER MODE),
SUB/(BUF R/W) 2 : BUS TRANCEIVER CONTROL OUTPUT (BUFFER MODE)

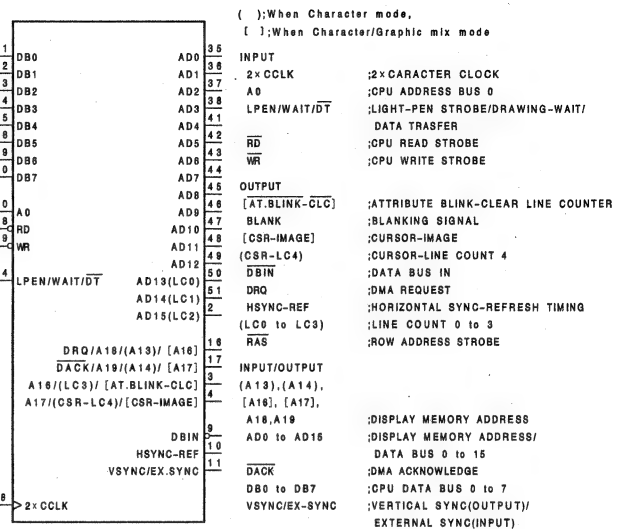
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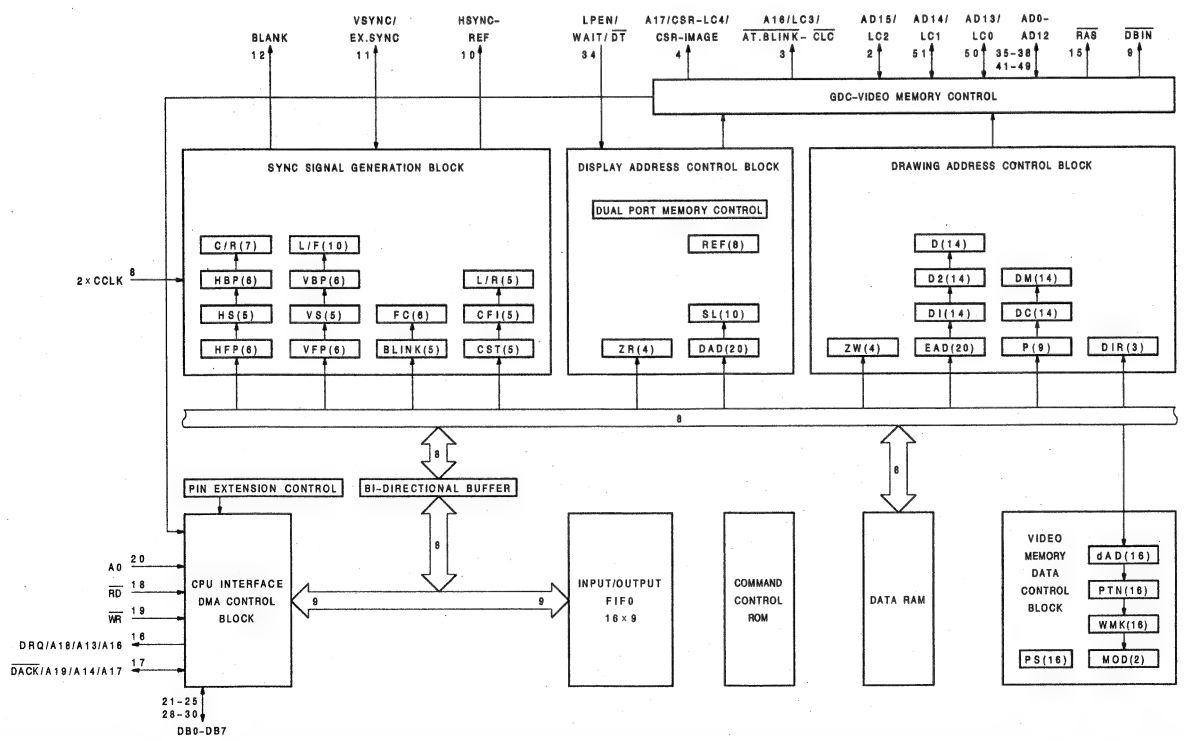
UPD72020GC-8-3B6 (NEC) FLAT PACKAGE
C-MOS GRAPHIC DISPLAY CONTROLLER
- TOP VIEW -



(VDD = +5V)							
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O
1	-	NC	18	I	VR	37	I/O
2	I/O	AD15/(LC2)	20	I	A0	38	I/O
3	O	A18/(LC3)/[AT.BLINK-CLC]	21	I/O	DB0	39	-
4	O	A17/(CSR-LC4)/[CSR-IMAGE]	22	I/O	DB1	40	-
5	-	VDD	23	I/O	DB2	41	I/O
6	-	VDD	24	I/O	DB3	42	I/O
7	-	IC	25	I/O	DB4	43	I/O
8	I	2xCCLK	26	-	NC	44	I/O
9	O	DBIN	27	-	NC	45	I/O
10	O	HSYNC-REF	28	I/O	DB5	46	I/O
11	I/O	VSYNC/EX.SYNC	29	I/O	DB6	47	I/O
12	O	BLANK	30	I/O	DB7	48	I/O
13	-	NC	31	-	GND	49	I/O
14	-	NC	32	-	GND	50	I/O
15	O	RAS	33	-	IC	51	I/O
16	O	DRQ/A18/(A13)/[A16]	34	I	LPEN/WAIT/DT	52	-
17	I/O	DACK/A19/(A14)/[A17]	35	I/O	A0		
18	I	RD	36	I/O	AD1		



IC: Internally Connected, (): When Character mode, []: When Character/Graphic mix mode



SECTION 7 SPARE PARTS

7-1. NOTES ON SPARE PARTS

補修用部品注意事項

(1) Safety Related Components Warning

Components marked with Δ on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation.

Replace these components with Sony parts whose part numbers appear in this manual or in service bulletins and service manual supplements published by Sony.

(1) 安全重要部品

回路図、分解図、電気部品表中、 Δ 印の部品は安全性を維持するために重要な部品です。従ってこれらの部品を交換するときには必ず指定の部品と交換して下さい。

(2) Standardization of Parts

Repair parts supplied from Sony Parts Center may not be always identical with the parts which actually in use due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts".

This manual's exploded views and electrical spare parts list are indicating the part numbers of "the standardized genuine parts at present".

(2) 部品の共通化

ソニーから供給される部品セットに実装されているものと異なることがあります。これは部品の共通化、改良等によるものです。

分解図や電気部品表には現時点での共通化された部品が記載されています。

(3) Stock of Parts

Parts marked with "o" SP (Supply Code) column of the spare parts list are not normally required for routine service work. Orders for parts marked with "o" will be processed, but allow for additional delivery time.

(3) 部品の在庫

部品表のSP (Supply code) 欄に o で示される部品は交換頻度が低い部品ですので在庫していないことがあり、納期が長くなることがあります。

(4) Units for Capacitors, Inductors and Resistors

The following units are assumed in schematic diagrams, electrical parts list and exploded views unless otherwise specified.

Capacitors : μF
Inductors : μH
Resistors : Ω

(4) コンデンサー、インダクター、抵抗の単位

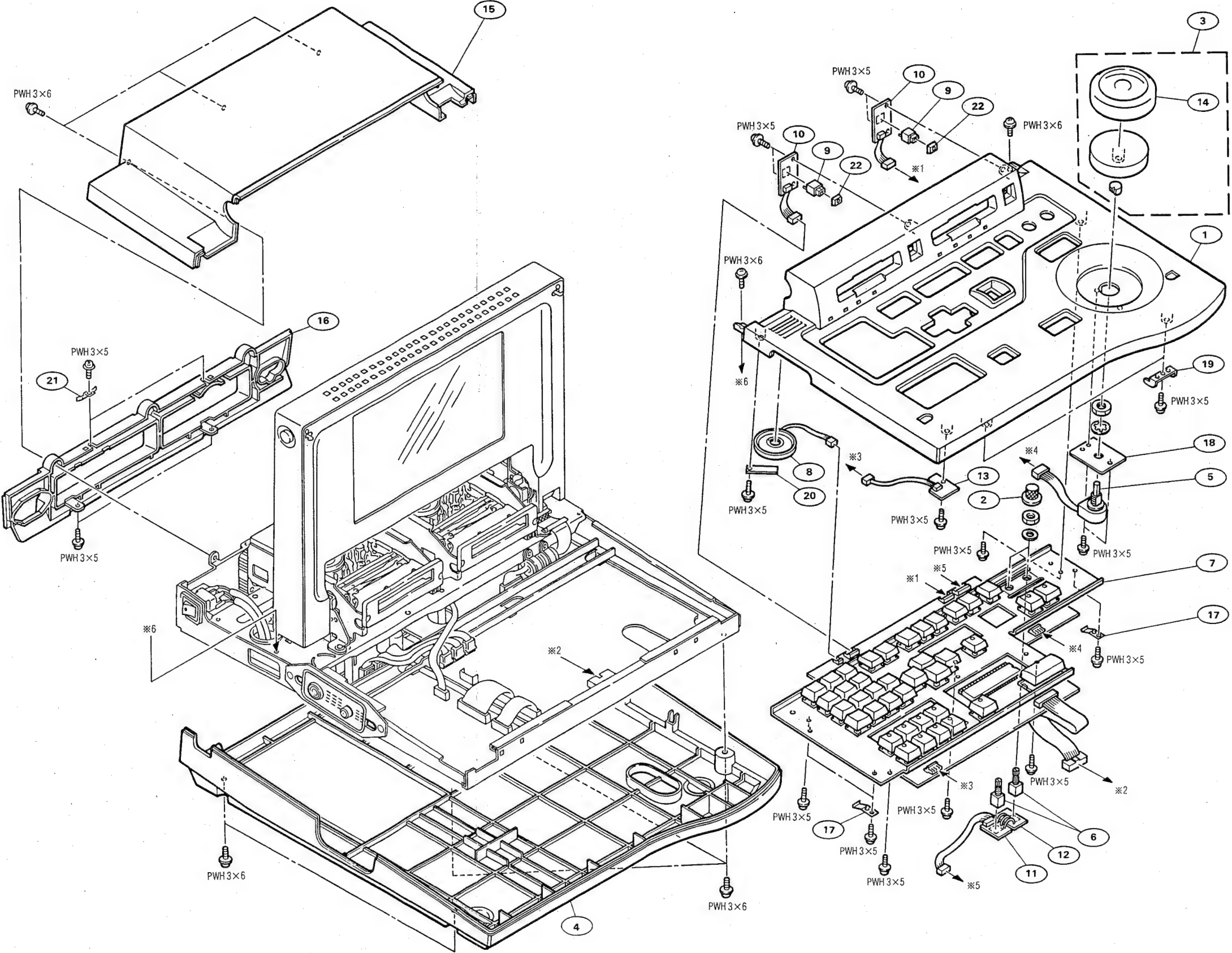
回路図、分解図、電気部品表中、特に明記したものを除き、下記の単位は省略されています。

コンデンサー : μF
インダクター : μH
抵抗 : Ω

7-2. EXPLODED VIEWS AND PARTS

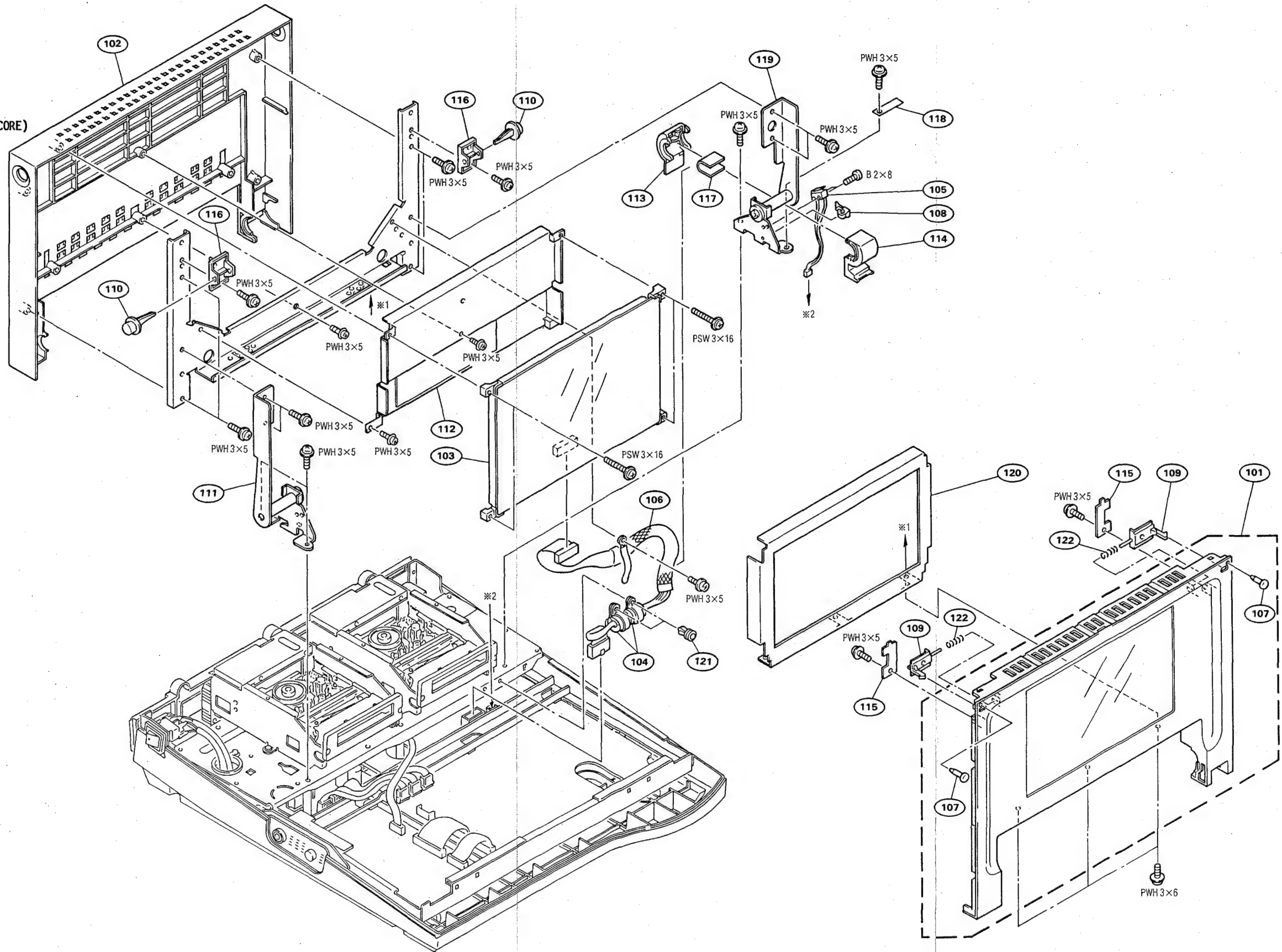
CABINET AND KEY ASSY

No.	Part No.	SP Description
1	X-3678-029-3	o PANEL ASSY, KEY
2	X-3678-031-1	o KNOB ASSY
3	X-3678-032-1	s DIAL, ASSY
4	X-3678-034-1	o BOARD, BOTTOM ASSY
5	1-466-955-11	s ENCODER, ROTARY
6	1-467-523-11	s ENCODER, ROTARY
7	1-467-524-11	o KEY BOARD UNIT
8	1-544-578-11	s SPEAKER
9	1-571-655-21	o SWITCH, TACTIL
10	1-650-074-11	s PRINTED CIRCUIT BOARD, KY-147
11	1-650-078-11	s PRINTED CIRCUIT BOARD, VR-154
12	1-650-079-11	s PRINTED CIRCUIT BOARD, VR-181
13	1-650-080-11	s PRINTED CIRCUIT BOARD, LED-160
14	3-179-110-01	s COVER, DIAL
15	3-678-367-02	o BOARD, TOP
16	3-678-369-02	o PANEL, REAR
17	3-678-374-02	o PLATE, GROUND (KY)
18	3-678-377-01	o PLATE, ENCODER
19	3-678-382-01	o BRACKET, KY
20	3-678-389-01	o CLAMP, SPEAKER
21	3-678-478-01	o PLATE, GROUND (TB)
22	4-928-315-81	s KEY TOP



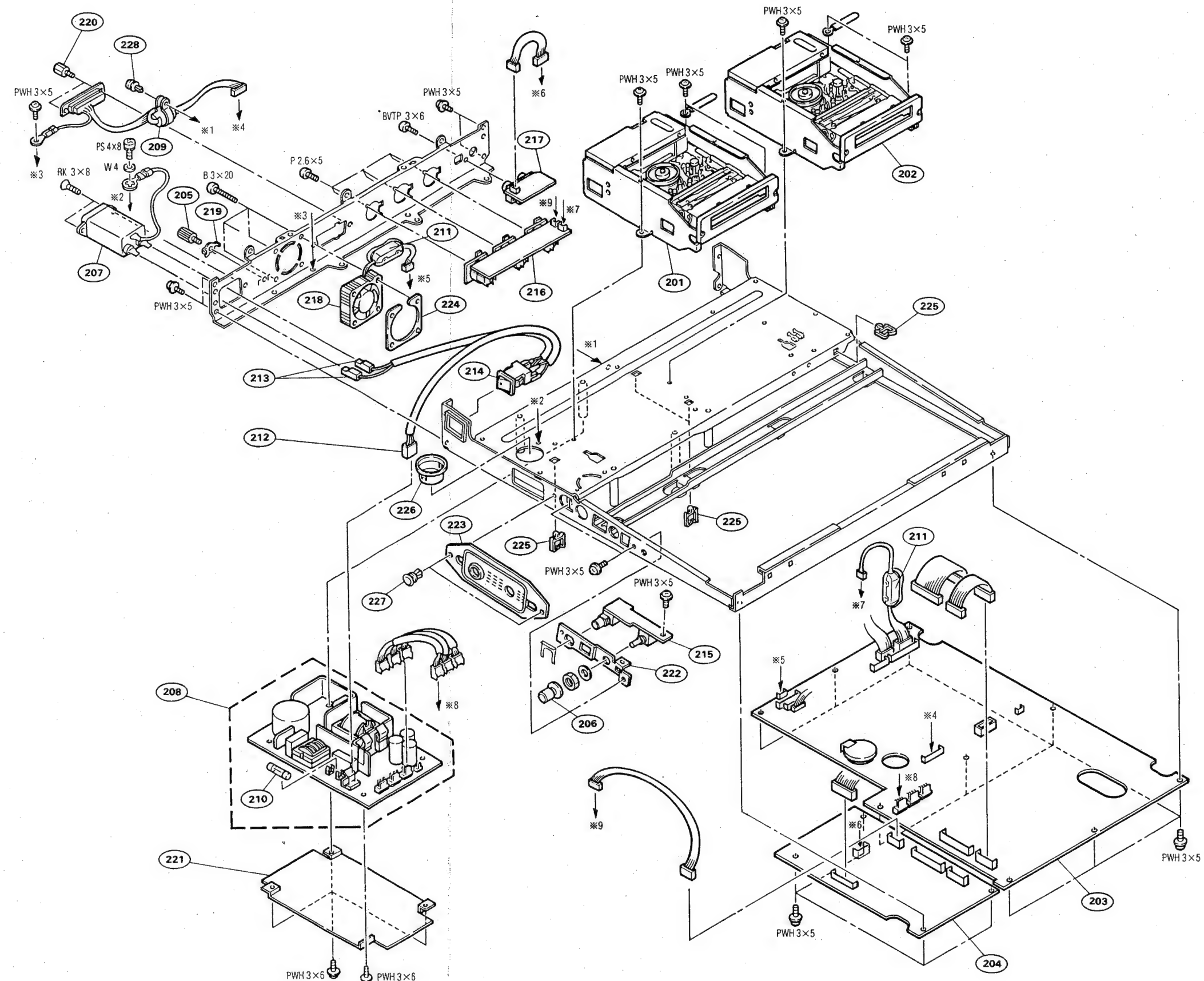
DISPLAY ASSY

No.	Part No.	SP Description
101	X-3678-030-3	o PANEL(DP), FRONT ASSY
102	X-3678-033-2	o PANEL(DP), REAR ASSY
103	1-466-954-11	s DISPLAY UNIT, EL
104	1-500-082-11	s FILTER, CLAMP (FERRITE CORE)
105	1-570-028-11	s SWITCH, MICRO
106	1-952-582-11	o HARNESS, SUB (EL)
107	3-351-878-01	s FOOT, RUBBER
108	3-672-420-00	o CLAMP (T=1.6)
109	3-678-363-01	o LOCK CLAW
110	3-678-370-01	o BUTTON(DP), LOCK
111	3-678-371-02	o UNIT, TILT(L)
112	3-678-373-02	o DP PLATE, SHIELD
113	3-678-378-02	o ROLLER(A), HARNESS
114	3-678-379-02	o ROLLER(B), HARNESS
115	3-678-384-01	o LID(DP) L, KNOB
116	3-678-387-01	o TABLE(DP), BUTTON
117	3-678-388-02	o COVER, SHAFT
118	3-678-389-01	o CLAMP, SPEAKER
119	3-678-391-02	o UNIT, TILT(R)
120	3-678-479-01	o PLATE, SHIELD (DPF)
121	3-183-850-01	s NYLON RIVET DIA. 4x7
122	4-861-930-01	s SPRING, COMPRESSION

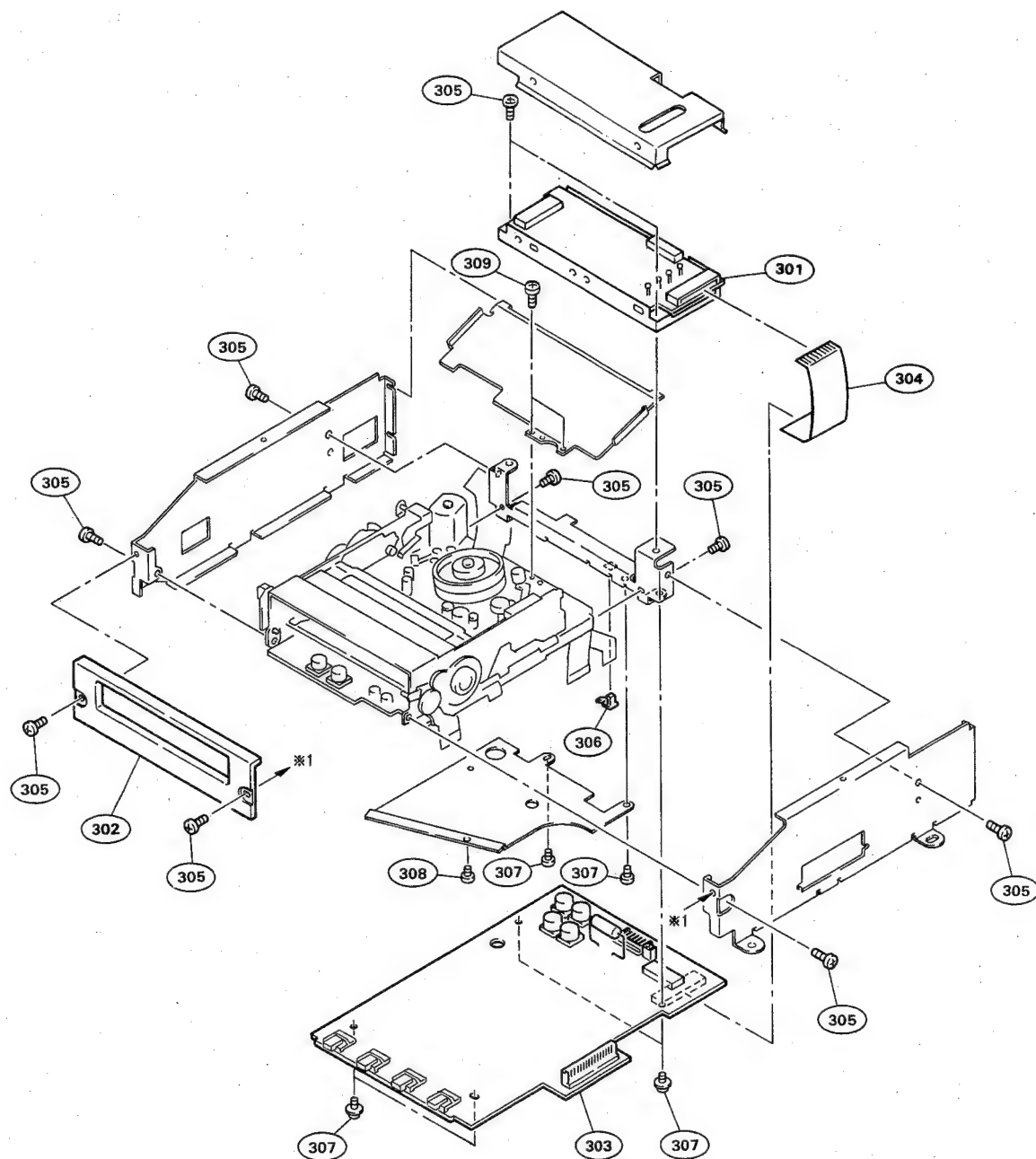


MAIN CHASSIS ASSY

No.	Part No.	SP Description
201	A-8267-997-A	s DECK(PLAYER) ASSY, MECHANICAL (MT-PCM-E7700 P-103)
202	A-8267-999-A	s DECK(RECORDER) ASSY, MECHANICAL (MT-PCM-E7700 R-103)
203	A-8275-316-A	o COMPLETE PCB, SSP-8
204	A-8275-317-A	o COMPLETE PCB, ADA-31
205	X-2068-004-1	s TERMINAL ASSY
206	X-3678-031-1	o KNOB ASSY
207	Δ1-251-148-11	s INLET, AC(3P)
208	Δ1-413-647-11	s SWITCHING REGULATOR
209	1-500-082-11	s FILTER, CLAMP (FERRITE CORE)
210	1-532-827-11	s FUSE (MT4-3A-N1)
211	1-543-793-11	s FILTER, CLAMP (FERRITE CORE)
212	Δ1-560-764-21	o TERMINAL, SOLDERLESS
212	Δ1-562-817-11	o HOUSING, CONNECTOR 2P
213	Δ1-565-787-21	o CONTACT, RECEPTACLE 1P
214	Δ1-570-455-11	s SWITCH, AC POWER SEESAW
215	1-650-075-11	s PRINTED CIRCUIT BOARD, HP-57
216	1-650-076-11	s PRINTED CIRCUIT BOARD, CP-233
217	1-650-077-11	s PRINTED CIRCUIT BOARD, CP-234
218	1-698-239-11	s MOTOR, DC FAN
219	2-068-008-00	s WASHER
220	3-673-910-00	o SCREW, CONNECTOR
221	3-678-356-01	o COVER, SW REG
222	3-678-376-01	o BRACKET, JACK
223	3-678-380-01	o PLATE, MASKING(JACK)
224	3-692-461-11	o NUT, PLATE
225	3-694-225-01	o CLAMP
226	3-723-749-01	o BUSHING, SNAP
227	4-818-403-00	s RIVET, NYLON
228	3-183-850-01	s NYLON RIVET DIA. 4x7

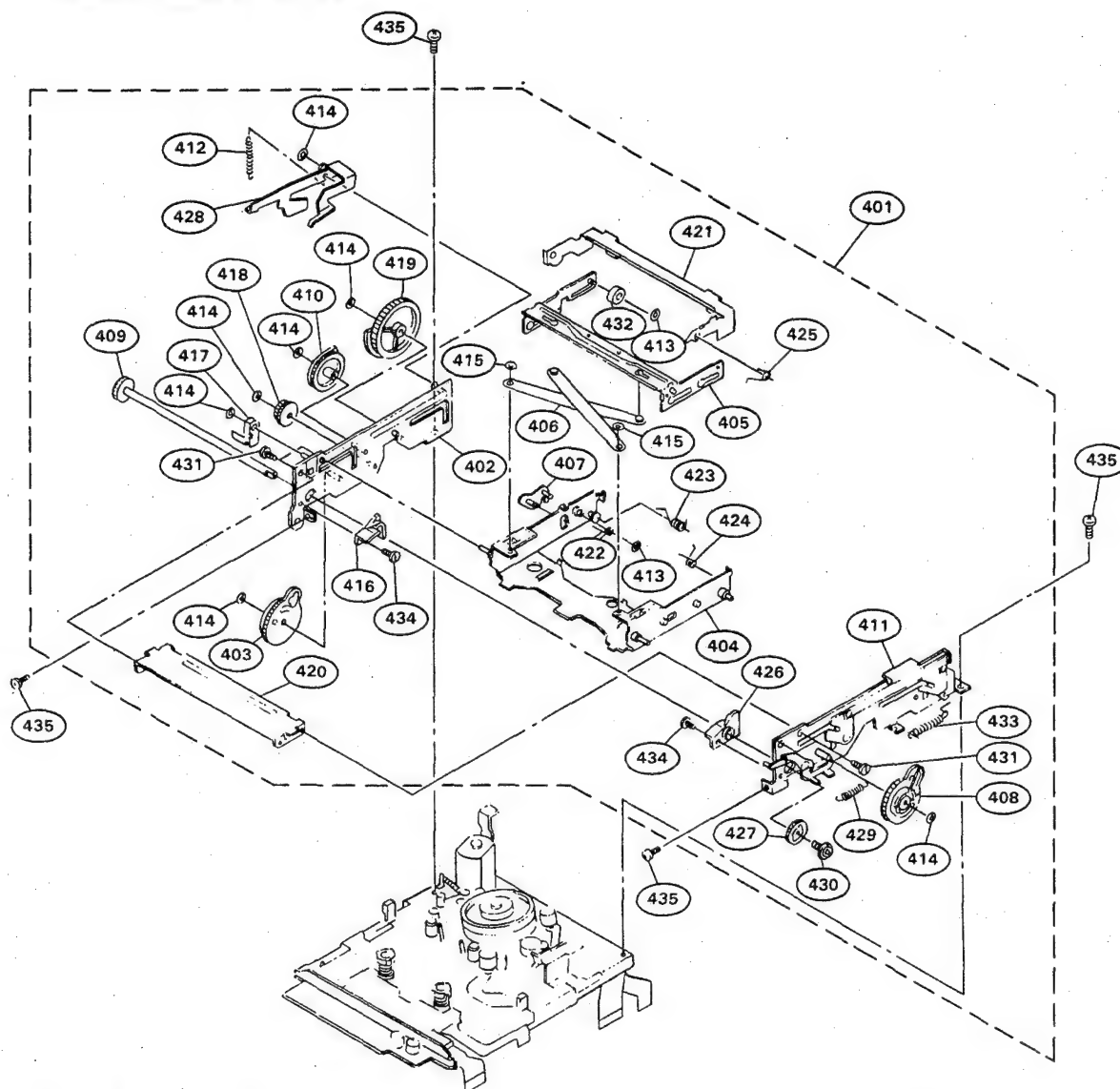


MECHANICAL DECK (PLAYER AND RECORDER) ASSY CASE SECTION



No.	Part No.	SP Description
301	A-8310-132-A	o RF-53 ASSY(RP)
302	A-8267-753-B	o WINDOW ASSY, CASSETTE
303	A-8310-133-A	o MOUNTED CIRCUIT BOARD, SV-147
304	1-764-402-11	s WIRE, FLEXIBLE CARD(1.00MM)18P
305	3-374-615-11	s SCREW(M2), BIND
306	3-671-150-11	o CLAMP
307	3-703-502-21	s SCREW
308	7-627-850-08	s SCREW,PRECISION +P 1.4X2
309	7-627-850-47	s SCREW,PRECISION +P 1.4X1.6

CASSETTE COMPARTMENT SECTION



No. Part No. SP Description

401 A-8267-998-A s CASSETTE COMPARTMENT ASSY
402 X-3363-985-5 s PLATE (LEFT) ASSY, SIDE
403 X-3363-986-2 s GEAR (LEVER LEFT) ASSY
404 X-3363-987-1 s HOLDER ASSY, CASSETTE
405 X-3363-989-5 s SLIDER (CASSETTE) ASSY

406 X-3363-990-1 s LEVER ASSY, X
407 X-3363-991-3 s LEVER ASSY, SLIDER LOCK
408 X-3363-995-2 s GEAR (LEVER RIGHT) ASSY
409 X-3363-996-1 s GEAR (JOINT) ASSY
410 X-3366-603-1 s GEAR (C3) ASSY

411 X-3367-014-1 s PLATE (RIGHT) ASSY, SIDE
412 3-140-263-99 s SPRING, TENSION
413 3-321-393-01 s WASHER, STOPPER
414 3-341-752-11 s WASHER, POLYETHYLENE
415 3-341-753-11 s WASHER, POLYETHYLENE

416 3-374-680-01 s GUIDE (CASSETTE LEFT)
417 3-374-681-01 s LEVER (SWITCH)
418 3-374-686-01 s GEAR
419 3-374-688-01 s GEAR (C2)
420 3-374-689-01 s PLATE, JOINT

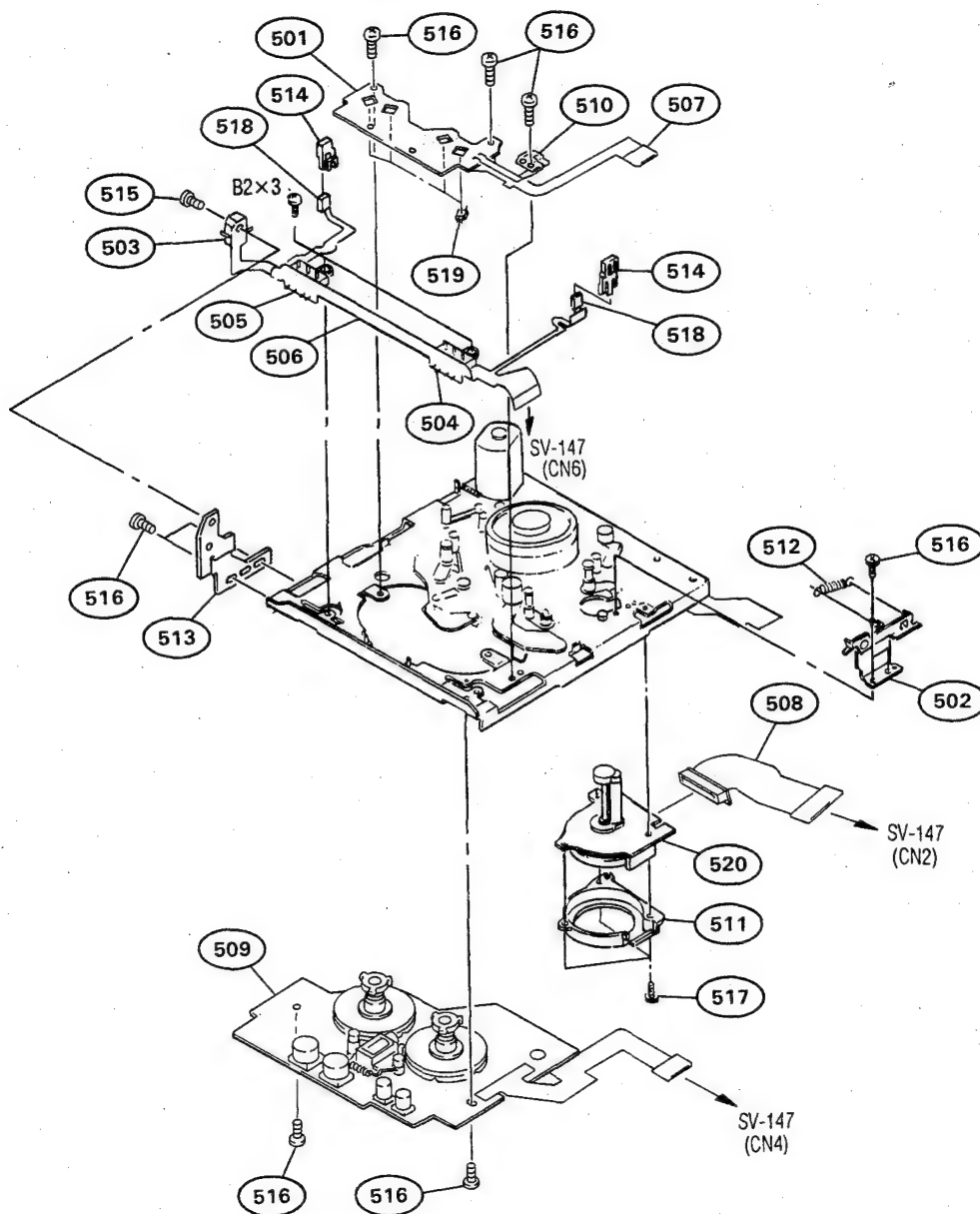
No. Part No. SP Description

421 3-374-713-01 s LEVER (CASSETTE)
422 3-374-720-01 s SPRING (SLIDER LOCK), TORSION
423 3-374-721-02 s SPRING (SLIDER RETURN), TORSION
424 3-374-722-01 s SPRING (LID ARM), TORSION
425 3-374-723-01 s SPRING (CASSETTE LEVER), TORSION

426 3-374-734-01 s GUIDE (CASSETTE RIGHT)
427 3-374-739-01 s GEAR (JOINT RIGHT)
428 3-388-228-02 s LEVER (LID UP)
429 3-561-628-00 s SPRING, TENSION
430 3-703-502-11 s SCREW

431 3-703-816-31 s SCREW (M1.4X1.6), SPECIAL HEAD
432 3-904-008-01 s ROLLER
433 4-858-478-00 s SPRING, TENSION
434 7-627-850-27 s SCREW, PRECISION +P 1.4X3
435 7-627-850-47 s SCREW, PRECISION +P 1.4X1.6

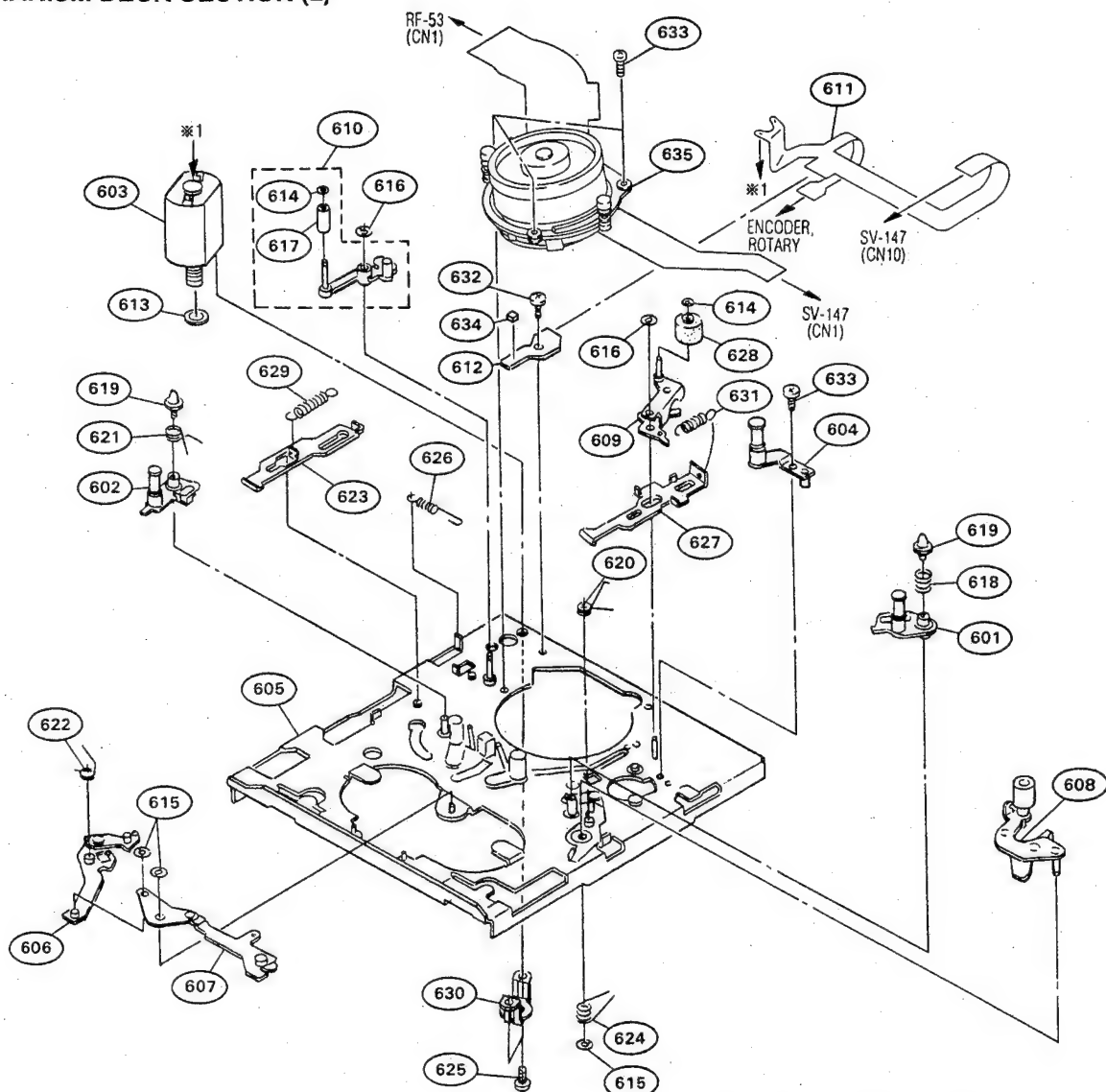
MECHANISM DECK SECTION (1)



No.	Part No.	SP Description
501	A-8276-769-A	o MOUNTED CIRCUIT BOARD, REEL FG
502	X-3363-984-1	s ARM ASSY, LID
503	1-570-771-11	s SWITCH
504	1-572-950-11	s SWITCH, PUSH
505	1-572-951-11	s SWITCH, PUSH
506	1-642-056-12	s PRINTED CIRCUIT BOARD, RECOGNI END FLEXIBLE
507	1-648-978-11	s PRINTED CIRCUIT BOARD, REEL FG, DEW FLEXIBLE
508	1-648-979-11	s PRINTED CIRCUIT BOARD, CAPSTAN FLEXIBLE
509	1-698-227-11	s MOTOR, REEL
510	1-809-544-12	s SENSOR, DEW CONDENSATION

No.	Part No.	SP Description
511	3-374-654-01	s COVER (MOTOR)
512	3-374-672-01	s SPRING, TENSION
513	3-374-673-01	s BRACKET (SWITCH)
514	3-374-674-01	s HOLDER (ES)
515	7-627-553-67	s SCREW, PRECISION +P 2X5
516	7-627-850-08	s SCREW, PRECISION +P 1.4X2
517	7-627-850-27	s SCREW, PRECISION +P 1.4X3
518	8-729-907-25	s PHOTO TRANSISTOR PT4850F
519	8-759-057-48	s PHOTO REFLECTOR NJL5803K-F10
520	8-835-329-12	s MOTOR, DC U-21A

MECHANISM DECK SECTION (2)



No. Part No. SP Description

601 A-8267-743-A s ROLLER ASSY, RG
 602 A-8267-744-A s ROLLER ASSY, LG
 603 A-8267-759-A s MOTOR ASSY, DRIVE
 604 A-8267-761-A s GUIDE ASSY, ROLLER
 605 X-3363-963-1 o CHASSIS ASSY

606 X-3363-965-1 s LEVER ASSY, CAM
 607 X-3363-966-1 s LEVER ASSY, LR
 608 X-3363-976-1 s PINCH ROLLER ASSY
 609 X-3363-983-1 s ARM ASSY, CR
 610 X-3366-602-1 s TENSION REGULATOR ASSY

611 1-648-976-11 s PRINTED CIRCUIT BOARD,
 TENTEGI MOTER ENCODER FLEXIBLE
 612 1-648-982-11 o PRINTED CIRCUIT BOARD, TENREGI
 613 3-320-354-01 s WASHER
 614 3-321-393-01 s WASHER, STOPPER
 615 3-341-752-11 s WASHER, POLYETHYLENE

616 3-341-753-11 s WASHER, POLYETHYLENE
 617 3-360-866-01 s ROLLER (TENSION REGULATOR)
 618 3-374-604-01 s SPRING, COMPRESSION
 619 3-374-605-01 s SHAFT (CASSETTE)
 620 3-374-606-01 s SPRING (R), TORSION

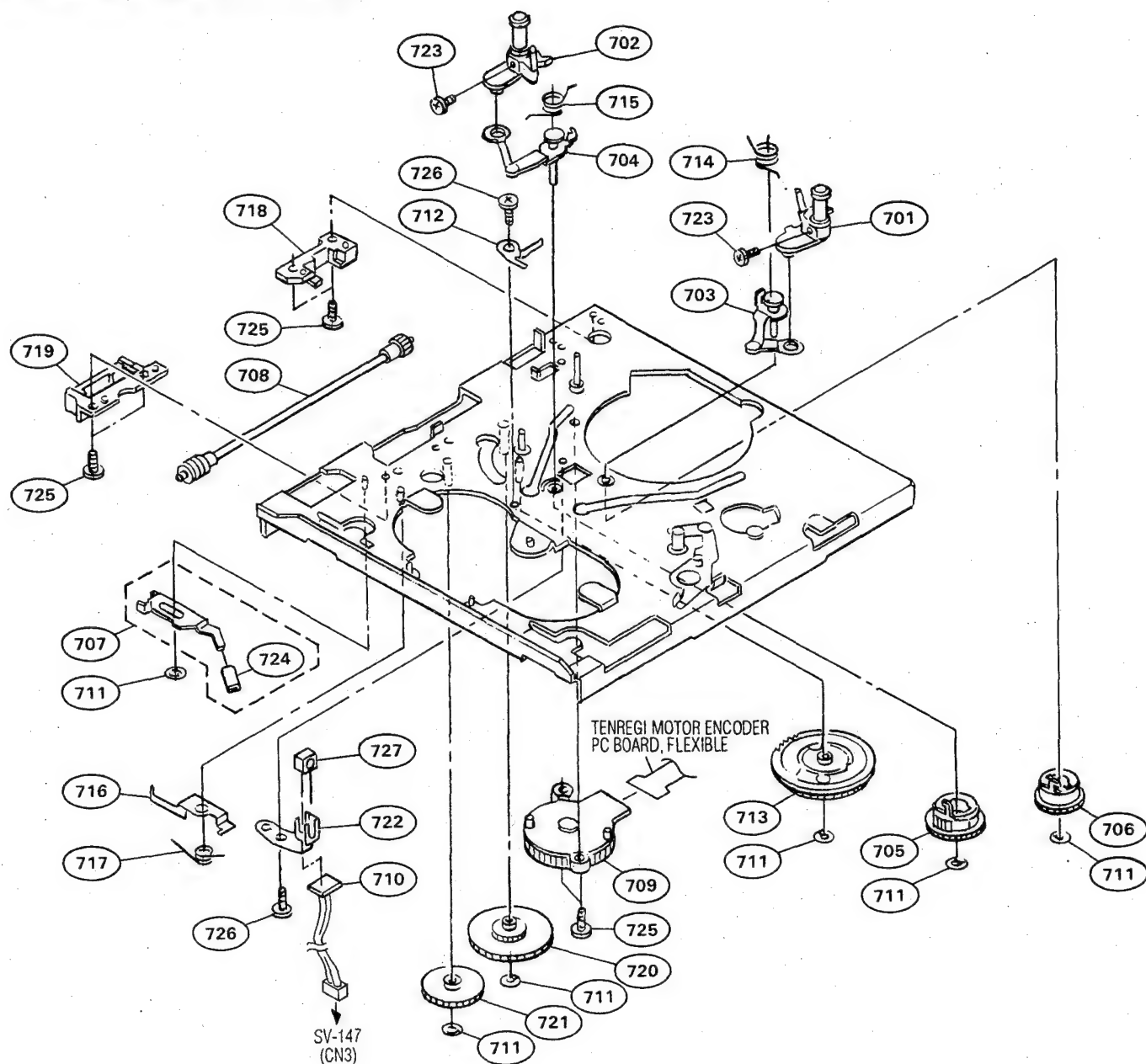
No. Part No. SP Description

621 3-374-608-01 s SPRING (LF), TORSION
 622 3-374-609-03 s SPRING (L), TORSION
 623 3-374-610-02 s SLIDER
 624 3-374-635-01 s SPRING (P), TORSION
 625 3-374-657-01 s SCREW (M2X2)

626 3-374-662-01 s SPRING, TENSION
 627 3-374-665-01 s SLIDER, CR
 628 3-375-727-01 s ROLLER (HC)
 629 3-375-728-01 s SPRING, TENSION
 630 3-379-832-01 s RETAINER, THRUST

631 3-570-776-01 s SPRING, TENSION
 632 7-627-850-08 s SCREW,PRECISION +P 1.4X2
 633 7-627-850-27 s SCREW,PRECISION +P 1.4X3
 634 8-719-821-03 s ELEMENT, HALL THS117
 635 8-848-611-11 s DRUM ASSY DOU-21A-R
 (For MT-PCM-E7700 P-103,PLAYER)
 8-848-612-11 s DRUM ASSY DOU-22A-R
 (For MT-PCM-E7700 R-103,RECORDER)

MECHANISM DECK SECTION (3)



No. Part No. SP Description

701 X-3363-969-1 s ROLLER ASSY, SLANT GUIDE (T)
 702 X-3363-972-3 s ROLLER ASSY, SLANT GUIDE (S)
 703 X-3363-974-1 s ARM (T) ASSY, LOADING
 704 X-3363-975-1 s ARM (S) ASSY, LOADING
 705 X-3363-978-1 s GEAR (S) ASSY, LOADING

706 X-3363-979-3 s GEAR (T) ASSY, LOADING
 707 X-3363-980-1 s PLATE ASSY, SPOOL, REEL
 708 X-3363-981-1 s GEAR ASSY, DRIVE
 709 1-466-670-21 s ENCODER, ROTARY
 710 1-642-088-11 o PRINTED CIRCUIT BOARD, GOMA

711 3-341-753-11 s WASHER, POLYETHYLENE
 712 3-374-628-02 s PLATE, LOAD, PRE
 713 3-374-636-01 s GEAR, CAM
 714 3-374-641-01 s SPRING (T), TORSION
 715 3-374-642-02 s SPRING (S), TORSION

No. Part No. SP Description

716 3-374-645-01 o RETAINER, SPOOL PLATE
 717 3-374-646-01 s SPRING (SPOOL PLATE), TORSION
 718 3-374-647-01 s RETAINER (A), DRIVE SHAFT
 719 3-374-648-01 s RETAINER (B), DRIVE SHAFT
 720 3-374-652-01 s GEAR (M2)

721 3-374-653-01 s GEAR (MD WHEEL)
 722 3-374-655-01 s BRACKET (LED)
 723 3-704-246-31 s SCREW (P1.4X2.5)
 724 4-866-397-00 o CUSHION, LED
 725 7-627-850-27 s SCREW,PRECISION +P 1.4X3

726 7-627-850-47 s SCREW,PRECISION +P 1.4X1.6
 727 8-719-988-42 s DIODE GL453S

7-3. ELECTRICAL PARTS LIST

CAPACITOR, CHIP CERAMIC

Part No. SP Description

1-163-019-00	s	CAP, CHIP CERAMIC	6800pF	10%	50V
1-163-038-00	s	CAP, CHIP CERAMIC	0.1		50V
1-163-125-00	s	CAP, CHIP CERAMIC	220pF	5%	50V
1-163-127-00	s	CAP, CHIP CERAMIC	270pF	5%	50V
1-163-131-00	s	CAP, CHIP CERAMIC	390pF	5%	50V

1-163-133-00	s	CAP, CHIP CERAMIC	470pF	5%	50V
1-163-227-11	s	CAP, CHIP CERAMIC	10pF	5%	50V
1-163-229-11	s	CAP, CHIP CERAMIC	12pF	5%	50V
1-163-235-11	s	CAP, CHIP CERAMIC	22pF	5%	50V
1-163-239-11	s	CAP, CHIP CERAMIC	33pF	5%	50V

1-163-243-11	s	CAP, CHIP CERAMIC	47pF	5%	50V
1-163-251-11	s	CAP, CHIP CERAMIC	100pF	5%	50V
1-163-257-11	s	CAP, CHIP CERAMIC	180pF	5%	50V
1-163-275-11	s	CAP, CHIP CERAMIC	0.001	5%	50V
1-163-833-00	s	CAP, CHIP CERAMIC	0.068		25V

CAPACITOR, CHIP TANTALUM

Part No. SP Description

1-135-073-00	s	CAP, CHIP TANTALUM	0.33	10%	35V
1-135-208-11	s	CAP, CHIP TANTALUM	1	20%	10V
1-135-217-21	s	CAP, CHIP TANTALUM	15	20%	6.3V
1-135-227-11	s	CAP, CHIP TANTALUM	100	20%	6.3V
1-135-259-11	s	CAP, CHIP TANTALUM	10	20%	6.3V

RESISTOR, CHIP

Part No. SP Description

1-216-001-00	s	RES, CHIP	10	5%	1/10W
1-216-009-00	s	RES, CHIP	22	5%	1/10W
1-216-017-00	s	RES, CHIP	47	5%	1/10W
1-216-021-00	s	RES, CHIP	68	5%	1/10W
1-216-025-00	s	RES, CHIP	100	5%	1/10W

1-216-029-00	s	RES, CHIP	150	5%	1/10W
1-216-033-00	s	RES, CHIP	220	5%	1/10W
1-216-035-00	s	RES, CHIP	270	5%	1/10W
1-216-037-00	s	RES, CHIP	330	5%	1/10W
1-216-039-00	s	RES, CHIP	390	5%	1/10W

1-216-041-00	s	RES, CHIP	470	5%	1/10W
1-216-049-00	s	RES, CHIP	1K	5%	1/10W
1-216-051-00	s	RES, CHIP	1.2K	5%	1/10W
1-216-055-00	s	RES, CHIP	1.8K	5%	1/10W
1-216-057-00	s	RES, CHIP	2.2K	5%	1/10W

1-216-063-00	s	RES, CHIP	3.9K	5%	1/10W
1-216-065-00	s	RES, CHIP	4.7K	5%	1/10W
1-216-073-00	s	RES, CHIP	10K	5%	1/10W
1-216-075-00	s	RES, CHIP	12K	5%	1/10W
1-216-077-00	s	RES, CHIP	15K	5%	1/10W

1-216-079-00	s	RES, CHIP	18K	5%	1/10W
1-216-081-00	s	RES, CHIP	22K	5%	1/10W
1-216-083-00	s	RES, CHIP	27K	5%	1/10W
1-216-085-00	s	RES, CHIP	33K	5%	1/10W
1-216-089-91	s	RES, CHIP	47K	5%	1/10W

1-216-095-00	s	RES, CHIP	82K	5%	1/10W
1-216-097-00	s	RES, CHIP	100K	5%	1/10W
1-216-103-91	s	RES, CHIP	180K	5%	1/10W
1-216-113-00	s	RES, CHIP	470K	5%	1/10W
1-216-121-00	s	RES, CHIP	1.0M	5%	1/10W

1-216-308-00	s	RES, CHIP	4.7	5%	1/10W
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ADA-31 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-8275-317-A	o MOUNTED CIRCUIT BOARD, ADA-31 (This assembly includes the following parts.)
C1	1-124-589-11	s ELECT 47uF 20% 16V
C13	1-124-261-00	s ELECT 10uF 20% 50V
C14	1-124-261-00	s ELECT 10uF 20% 50V
C20	1-126-157-11	s ELECT 10uF 20% 16V
C21	1-126-157-11	s ELECT 10uF 20% 16V
C24	1-126-157-11	s ELECT 10uF 20% 16V
C25	1-124-234-00	s ELECT 22uF 20% 16V
C101	1-164-085-11	s CERAMIC 1000pF 10% 50V
C102	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
C103	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
C105	1-164-085-11	s CERAMIC 1000pF 10% 50V
C118	1-126-096-11	s ELECT 10uF 20% 35V
C121	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
C123	1-126-163-11	s ELECT 4.7uF 20% 50V
C124	1-164-232-11	s CERAMIC, CHIP 0.01uF 10% 100V
C125	1-164-232-11	s CERAMIC, CHIP 0.01uF 10% 100V
C201	1-164-085-11	s CERAMIC 1000pF 10% 50V
C202	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
C203	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
C205	1-164-085-11	s CERAMIC 1000pF 10% 50V
C218	1-126-096-11	s ELECT 10uF 20% 35V
C221	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
C223	1-126-163-11	s ELECT 4.7uF 20% 50V
C224	1-164-232-11	s CERAMIC, CHIP 0.01uF 10% 100V
C225	1-164-232-11	s CERAMIC, CHIP 0.01uF 10% 100V
C309	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
C310	1-164-232-11	s CERAMIC, CHIP 0.01uF 10% 100V
C312	1-164-085-11	s CERAMIC 1000pF 10% 50V
C409	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
C410	1-164-232-11	s CERAMIC, CHIP 0.01uF 10% 100V
C412	1-164-085-11	s CERAMIC 1000pF 10% 50V
C501	1-126-096-11	s ELECT 10uF 20% 35V
C503	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
C504	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
C505	1-126-096-11	s ELECT 10uF 20% 35V
C507	1-126-163-11	s ELECT 4.7uF 20% 50V
C508	1-164-232-11	s CERAMIC, CHIP 0.01uF 10% 100V
C510	1-126-096-11	s ELECT 10uF 20% 35V
C511	1-164-232-11	s CERAMIC, CHIP 0.01uF 10% 100V
C514	1-124-261-00	s ELECT 10uF 20% 50V
C515	1-126-157-11	s ELECT 10uF 20% 16V
C517	1-124-261-00	s ELECT 10uF 20% 50V
C519	1-124-261-00	s ELECT 10uF 20% 50V
C521	1-126-096-11	s ELECT 10uF 20% 35V
C522	1-164-489-11	s CERAMIC, CHIP 0.22uF 10% 16V
C523	1-164-232-11	s CERAMIC, CHIP 0.01uF 10% 100V
C602	1-126-096-11	s ELECT 10uF 20% 35V
C603	1-126-096-11	s ELECT 10uF 20% 35V
C604	1-126-096-11	s ELECT 10uF 20% 35V
C605	1-126-096-11	s ELECT 10uF 20% 35V
C702	1-126-923-11	s ELECT 220uF 20% 10V
C802	1-126-096-11	s ELECT 10uF 20% 35V
C804	1-124-589-11	s ELECT 47uF 20% 16V
C805	1-124-589-11	s ELECT 47uF 20% 16V
C807	1-126-096-11	s ELECT 10uF 20% 35V
C809	1-124-589-11	s ELECT 47uF 20% 16V

(ADA-31 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
C810	1-124-589-11	s ELECT 47uF 20% 16V
C930	1-126-096-11	s ELECT 10uF 20% 35V
C931	1-126-096-11	s ELECT 10uF 20% 35V
CN1	1-564-005-11	o CONNECTOR 6P, MALE
CN2	1-506-480-11	s CONNECTOR 15P, MALE
CN3	1-506-474-11	s CONNECTOR 9P, MALE
CN4	1-506-469-11	s CONNECTOR 4P, MALE
CN5	1-564-011-11	o CONNECTOR 12P, MALE
CP501	1-466-175-11	s FILTER UNIT, LOW-PASS
D1	8-719-028-74	s DIODE NSQ03A04
D2	8-719-028-74	s DIODE NSQ03A04
D3	8-719-028-74	s DIODE NSQ03A04
D4	8-719-028-74	s DIODE NSQ03A04
D6	8-719-941-23	s DIODE DA204U
D7	8-719-941-23	s DIODE DA204U
D8	8-719-210-33	s DIODE EC10DS2
D9	8-719-941-23	s DIODE DA204U
D10	8-719-941-23	s DIODE DA204U
D11	8-719-941-23	s DIODE DA204U
D12	8-719-941-23	s DIODE DA204U
D101	8-719-941-23	s DIODE DA204U
D102	8-719-941-23	s DIODE DA204U
D103	8-719-941-23	s DIODE DA204U
D104	8-719-941-23	s DIODE DA204U
D105	8-719-941-23	s DIODE DA204U
D106	8-719-941-23	s DIODE DA204U
D201	8-719-941-23	s DIODE DA204U
D202	8-719-941-23	s DIODE DA204U
D203	8-719-941-23	s DIODE DA204U
D204	8-719-941-23	s DIODE DA204U
D206	8-719-941-23	s DIODE DA204U
D207	8-719-941-23	s DIODE DA204U
D501	8-719-941-23	s DIODE DA204U
D502	8-719-941-23	s DIODE DA204U
D503	8-719-941-23	s DIODE DA204U
D504	8-719-941-23	s DIODE DA204U
D801	8-719-210-33	s DIODE EC10DS2
D901	8-719-210-33	s DIODE EC10DS2
D902	8-719-210-33	s DIODE EC10DS2
IC1	8-759-999-09	s IC CS5326-KP
IC2	8-759-701-84	s IC NJM7905FA
IC3	8-759-701-75	s IC NJM7805FA
IC4	8-759-701-59	s IC NJM78M09FA
IC5	8-759-701-87	s IC NJM7909FA
IC9	8-759-925-90	s IC SN74HC74NS
IC10	8-759-925-90	s IC SN74HC74NS
IC11	8-759-927-46	s IC SN74HC00NS
IC101	8-759-208-09	s IC TC4052BFHB
IC102	8-759-745-64	s IC NJM4560M
IC103	8-759-234-77	s IC TC4S66F
IC104	8-759-745-64	s IC NJM4560M
IC105	8-759-745-64	s IC NJM4560M
IC106	8-759-234-77	s IC TC4S66F
IC201	8-759-208-09	s IC TC4052BFHB
IC202	8-759-745-64	s IC NJM4560M
IC203	8-759-234-77	s IC TC4S66F
IC204	8-759-745-64	s IC NJM4560M
IC205	8-759-745-64	s IC NJM4560M

NOTE: Please see pages 7-10 for the parts that are not listed in the parts list.

(ADA-31 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
IC206	8-759-234-77	s IC TC4S66F
IC301	8-759-998-22	s IC PCM56P
IC302	8-759-745-64	s IC NJM4560M
IC303	8-759-234-77	s IC TC4S66F
IC401	8-759-998-22	s IC PCM56P
IC402	8-759-745-64	s IC NJM4560M
IC403	8-759-234-77	s IC TC4S66F
IC501	8-759-700-45	s IC NJM4556M-A
IC502	8-759-745-64	s IC NJM4560M
IC503	8-759-701-02	s IC NJM2073M
IC701	8-759-973-71	s IC TL7705CPS-B
L4	1-410-482-31	s INDUCTOR 100uH
L5	1-410-482-31	s INDUCTOR 100uH
L6	1-410-482-31	s INDUCTOR 100uH
L502	1-410-482-31	s INDUCTOR 100uH
L503	1-410-482-31	s INDUCTOR 100uH
L801	1-412-533-21	s INDUCTOR 47UH
L802	1-412-533-21	s INDUCTOR 47UH
Q4	8-729-901-05	s TRANSISTOR DTA124EK
Q501	8-729-901-05	s TRANSISTOR DTA124EK
Q502	8-729-901-00	s TRANSISTOR DTC124EK
Q503	8-729-140-98	s TRANSISTOR 2SD773-3
Q504	8-729-901-05	s TRANSISTOR DTA124EK
Q505	8-729-901-00	s TRANSISTOR DTC124EK
Q801	8-729-901-05	s TRANSISTOR DTA124EK
Q802	8-729-901-00	s TRANSISTOR DTC124EK
Q803	8-729-901-05	s TRANSISTOR DTA124EK
Q804	8-729-901-00	s TRANSISTOR DTC124EK
Q805	8-729-901-00	s TRANSISTOR DTC124EK
Q806	8-729-901-05	s TRANSISTOR DTA124EK
Q807	8-729-901-05	s TRANSISTOR DTA124EK
Q808	8-729-901-00	s TRANSISTOR DTC124EK
Q809	8-729-140-98	s TRANSISTOR 2SD773-3
RV101	1-241-631-11	s RES, ADJ CARBON 22K
RV201	1-241-631-11	s RES, ADJ CARBON 22K
RV301	1-241-630-11	s RES, ADJ CARBON 10K
RV401	1-241-630-11	s RES, ADJ CARBON 10K
RY501	1-515-716-11	s RELAY
RY502	1-515-716-11	s RELAY
RY801	1-515-716-11	s RELAY

CP-233A BOARD (For UC,EK)

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-650-076-11	o PRINTED CIRCUIT BOARD, CP-233
C1	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
C2	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
C4	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
C5	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
CN1	1-564-005-11	o CONNECTOR 6P, MALE
CN2	1-565-284-11	o CONNECTOR, XLR 3P, FEMALE
CN3	1-565-284-11	o CONNECTOR, XLR 3P, FEMALE
CN4	1-565-284-11	o CONNECTOR, XLR 3P, FEMALE
CN5	1-564-002-11	s CONNECTOR 3P, MALE
FB1	1-412-694-11	s INDUCTOR, BEED
FB2	1-412-694-11	s INDUCTOR, BEED
FB11	1-412-694-11	s INDUCTOR, BEED
FB12	1-412-694-11	s INDUCTOR, BEED
FB13	1-412-694-11	s INDUCTOR, BEED
FB14	1-412-694-11	s INDUCTOR, BEED
FB15	1-412-694-11	s INDUCTOR, BEED
FB16	1-412-694-11	s INDUCTOR, BEED
FB21	1-412-694-11	s INDUCTOR, BEED
FB22	1-412-694-11	s INDUCTOR, BEED
FB23	1-412-694-11	s INDUCTOR, BEED
FB24	1-412-694-11	s INDUCTOR, BEED
FB25	1-412-694-11	s INDUCTOR, BEED
FB26	1-412-694-11	s INDUCTOR, BEED

NOTE: Please see pages 7-10 for the parts that are not listed in the parts list.

CP-233B BOARD (For J)

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-650-076-11	o PRINTED CIRCUIT BOARD, CP-233
C1	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
C2	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
C4	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
C5	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
CN1	1-564-005-11	o CONNECTOR 6P, MALE
CN2	1-565-283-11	o CONNECTOR, XLR 3P, MALE
CN3	1-565-283-11	o CONNECTOR, XLR 3P, MALE
CN4	1-565-284-11	o CONNECTOR, XLR 3P, FEMALE
CN5	1-564-002-11	s CONNECTOR 3P, MALE
FB1	1-412-694-11	s INDUCTOR, BEED
FB2	1-412-694-11	s INDUCTOR, BEED
FB11	1-412-694-11	s INDUCTOR, BEED
FB12	1-412-694-11	s INDUCTOR, BEED
FB13	1-412-694-11	s INDUCTOR, BEED
FB14	1-412-694-11	s INDUCTOR, BEED
FB15	1-412-694-11	s INDUCTOR, BEED
FB16	1-412-694-11	s INDUCTOR, BEED
FB21	1-412-694-11	s INDUCTOR, BEED
FB22	1-412-694-11	s INDUCTOR, BEED
FB23	1-412-694-11	s INDUCTOR, BEED
FB24	1-412-694-11	s INDUCTOR, BEED
FB25	1-412-694-11	s INDUCTOR, BEED
FB26	1-412-694-11	s INDUCTOR, BEED

CP-234 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-650-077-11	o PRINTED CIRCUIT BOARD, CP-234
C1	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
C2	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
CN1	1-506-469-11	s CONNECTOR 4P, MALE
FB1	1-412-694-11	s INDUCTOR, BEED
FB2	1-412-694-11	s INDUCTOR, BEED
J1	1-562-999-41	s JACK, PIN 2P

HP-57 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-650-075-11	o PRINTED CIRCUIT BOARD, HP-57
1pc	3-678-376-01	o BRACKET, JACK
1pc	7-682-903-01	s SCREW +PWH 3X5
FB1	1-412-694-11	s INDUCTOR, BEED
FB2	1-412-694-11	s INDUCTOR, BEED
FB3	1-412-694-11	s INDUCTOR, BEED
FB4	1-412-694-11	s INDUCTOR, BEED
J1	1-569-190-11	s JACK (LARGE TYPE)
RV1	1-241-331-11	s RES, VAR CARBON 10K/10K

KY-247 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-650-074-11	o PRINTED CIRCUIT BOARD, KY-247
1pc	4-928-315-81	s KEY TOP
S1	1-571-655-21	s SWITCH, PUSH(WITH LED)

LED-160 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-650-080-11	o PRINTED CIRCUIT BOARD, LED-160
D1	8-719-041-51	s LED GL1EG111, YELLOWISH GREEN

REEL FG BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-8276-769-A	o MOUNTED CIRCUIT BOARD, REEL FG (This assembly includes the following parts.)
1pc	1-648-983-11	o PRINTED CIRCUIT BOARD, REEL FG
C1	1-164-505-11	s CERAMIC 2.2uF 16V

NOTE: Please see pages 7-10 for the parts that are not listed in the parts list.

RF-53 BOARD

Ref. No.

or Q'ty Part No. SP Description

C102	1-164-845-11	s CERAMIC 5PF 5% 16V
C103	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C104	1-164-845-11	s CERAMIC 5PF 5% 16V
C105	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C107	1-164-874-11	s CERAMIC 100PF 5% 16V
C108	1-164-874-11	s CERAMIC 100PF 5% 16V
C111	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C112	1-162-921-11	s CERAMIC, CHIP 33PF 5% 50V
C113	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C114	1-162-921-11	s CERAMIC, CHIP 33PF 5% 50V
C115	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C116	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C117	1-164-937-11	s CERAMIC 0.001uF 10% 16V
C118	1-164-937-11	s CERAMIC 0.001uF 10% 16V
C119	1-164-874-11	s CERAMIC 100PF 5% 16V
C120	1-164-874-11	s CERAMIC 100PF 5% 16V
C121	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C122	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C123	1-164-882-11	s CERAMIC 220PF 5% 16V
C124	1-164-940-11	s CERAMIC 0.0033uF 10% 16V
C125	1-164-882-11	s CERAMIC 220PF 5% 16V
C126	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C128	1-164-937-11	s CERAMIC 0.001uF 10% 16V
C129	1-164-935-11	s CERAMIC 470PF 10% 16V
C130	1-164-882-11	s CERAMIC 220PF 5% 16V
C131	1-164-874-11	s CERAMIC 100PF 5% 16V
C132	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C134	1-162-968-11	s CERAMIC, CHIP 0.0047uF 10% 50V
C136	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C137	1-164-882-11	s CERAMIC 220PF 5% 16V
C138	1-164-882-11	s CERAMIC 220PF 5% 16V
C139	1-162-964-11	s CERAMIC, CHIP 0.001uF 10% 50V
C202	1-164-845-11	s CERAMIC 5PF 5% 16V
C203	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C204	1-164-845-11	s CERAMIC 5PF 5% 16V
C205	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C207	1-164-874-11	s CERAMIC 100PF 5% 16V
C208	1-164-874-11	s CERAMIC 100PF 5% 16V
C211	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C212	1-162-921-11	s CERAMIC, CHIP 33PF 5% 50V
C213	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C214	1-162-921-11	s CERAMIC, CHIP 33PF 5% 50V
C215	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C216	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C217	1-164-937-11	s CERAMIC 0.001uF 10% 16V
C218	1-164-937-11	s CERAMIC 0.001uF 10% 16V
C219	1-164-874-11	s CERAMIC 100PF 5% 16V
C220	1-164-874-11	s CERAMIC 100PF 5% 16V
C221	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C222	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C223	1-164-882-11	s CERAMIC 220PF 5% 16V
C224	1-164-940-11	s CERAMIC 0.0033uF 10% 16V
C225	1-164-882-11	s CERAMIC 220PF 5% 16V
C226	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C228	1-164-937-11	s CERAMIC 0.001uF 10% 16V
C229	1-164-935-11	s CERAMIC 470PF 10% 16V
C230	1-164-882-11	s CERAMIC 220PF 5% 16V
C231	1-164-874-11	s CERAMIC 100PF 5% 16V
C232	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V

(RF-53 BOARD)

Ref. No.

or Q'ty Part No. SP Description

C234	1-162-968-11	s CERAMIC, CHIP 0.0047uF 10% 50V
C236	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C237	1-164-882-11	s CERAMIC 220PF 5% 16V
C238	1-164-882-11	s CERAMIC 220PF 5% 16V
C239	1-162-964-11	s CERAMIC, CHIP 0.001uF 10% 50V
C301	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C303	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C304	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C307	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
CN1	1-566-531-11	s CONNECTOR, FPC (ZIF) 15P
CN2	1-565-882-11	o CONNECTOR, 10P, MALE
CN3	1-566-534-11	s CONNECTOR, FPC (ZIF) 18P
IC101	8-752-039-01	s IC CXA1364R
IC201	8-752-039-01	s IC CXA1364R
IC301	8-759-064-36	s IC MB88346BPPFV
L101	1-410-381-11	s INDUCTOR CHIP 10UH
L201	1-410-381-11	s INDUCTOR CHIP 10UH
L301	1-410-381-11	s INDUCTOR CHIP 10UH
Q101	8-729-102-08	s TRANSISTOR 2SC2223-T1F14
Q102	8-729-102-08	s TRANSISTOR 2SC2223-T1F14
Q103	8-729-901-00	s TRANSISTOR DTC124EK
Q104	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q105	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q106	8-729-216-21	s TRANSISTOR 2SA1162-Y
Q107	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q108	8-729-216-21	s TRANSISTOR 2SA1162-Y
Q109	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q110	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q201	8-729-102-08	s TRANSISTOR 2SC2223-T1F14
Q202	8-729-102-08	s TRANSISTOR 2SC2223-T1F14
Q203	8-729-901-00	s TRANSISTOR DTC124EK
Q204	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q205	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q206	8-729-216-21	s TRANSISTOR 2SA1162-Y
Q207	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q208	8-729-216-21	s TRANSISTOR 2SA1162-Y
Q209	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q210	8-729-230-49	s TRANSISTOR 2SC2712-YG
R101	1-216-837-11	s METAL, CHIP 22K 5% 1/16W
R102	1-216-797-11	s METAL, CHIP 10 5% 1/16W
R103	1-216-797-11	s METAL, CHIP 10 5% 1/16W
R104	1-216-837-11	s METAL, CHIP 22K 5% 1/16W
R105	1-216-833-11	s METAL, CHIP 10K 5% 1/16W
R106	1-216-812-11	s METAL, CHIP 180 5% 1/16W
R107	1-216-812-11	s METAL, CHIP 180 5% 1/16W
R108	1-216-833-11	s METAL, CHIP 10K 5% 1/16W
R109	1-216-834-11	s METAL, CHIP 12K 5% 1/16W
R110	1-218-973-11	s METAL 27K 5% 1/16W
R111	1-218-967-11	s METAL 15K 5% 1/16W
R112	1-218-967-11	s METAL 15K 5% 1/16W
R113	1-218-990-11	s METAL 0 5% 1/16W
R114	1-218-973-11	s METAL 47K 5% 1/16W
R115	1-218-990-11	s METAL 0 5% 1/16W
R116	1-218-967-11	s METAL 15K 5% 1/16W
R117	1-218-967-11	s METAL 15K 5% 1/16W
R118	1-218-952-11	s METAL 820 5% 1/16W
R119	1-218-961-11	s METAL 4.7K 5% 1/16W
R120	1-220-184-81	s METAL 1.3K 5% 16W

NOTE: Please see pages 7-10 for the parts that are not listed in the parts list.

(RF-53 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
R121	1-218-961-11	s METAL 4.7K 5% 1/16W
R122	1-218-968-11	s METAL 18K 5% 1/16W
R123	1-218-968-11	s METAL 18K 5% 1/16W
R124	1-220-193-81	s METAL 7.5K 5% 16W
R125	1-220-193-81	s METAL 7.5K 5% 16W
R126	1-218-968-11	s METAL 18K 5% 1/16W
R127	1-220-193-81	s METAL 7.5K 5% 16W
R128	1-216-835-11	s METAL, CHIP 15K 5% 1/16W
R129	1-216-833-11	s METAL, CHIP 10K 5% 1/16W
R130	1-216-809-11	s METAL, CHIP 100 5% 1/16W
R131	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R132	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R133	1-216-830-11	s METAL, CHIP 5.6K 5% 1/16W
R134	1-216-830-11	s METAL, CHIP 5.6K 5% 1/16W
R135	1-216-791-11	s METAL, CHIP 3.3 5% 1/16W
R136	1-216-791-11	s METAL, CHIP 3.3 5% 1/16W
R137	1-216-827-11	s METAL, CHIP 3.3K 5% 1/16W
R138	1-216-827-11	s METAL, CHIP 3.3K 5% 1/16W
R139	1-216-827-11	s METAL, CHIP 3.3K 5% 1/16W
R140	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R201	1-216-837-11	s METAL, CHIP 22K 5% 1/16W
R202	1-216-797-11	s METAL, CHIP 10 5% 1/16W
R203	1-216-797-11	s METAL, CHIP 10 5% 1/16W
R204	1-216-837-11	s METAL, CHIP 22K 5% 1/16W
R205	1-216-833-11	s METAL, CHIP 10K 5% 1/16W
R206	1-216-812-11	s METAL, CHIP 180 5% 1/16W
R207	1-216-812-11	s METAL, CHIP 180 5% 1/16W
R208	1-216-833-11	s METAL, CHIP 10K 5% 1/16W
R209	1-216-834-11	s METAL, CHIP 12K 5% 1/16W
R210	1-218-973-11	s METAL 47K 5% 1/16W
R211	1-218-967-11	s METAL 15K 5% 1/16W
R212	1-218-967-11	s METAL 15K 5% 1/16W
R213	1-218-990-11	s METAL 0 5% 1/16W
R214	1-218-973-11	s METAL 47K 5% 1/16W
R215	1-218-990-11	s METAL 0 5% 1/16W
R216	1-218-967-11	s METAL 15K 5% 1/16W
R217	1-218-967-11	s METAL 15K 5% 1/16W
R218	1-218-952-11	s METAL 820 5% 1/16W
R219	1-218-961-11	s METAL 4.7K 5% 1/16W
R220	1-220-184-81	s METAL 1.3K 5% 16W
R221	1-218-961-11	s METAL 4.7K 5% 1/16W
R222	1-218-968-11	s METAL 18K 5% 1/16W
R223	1-218-968-11	s METAL 18K 5% 1/16W
R224	1-220-193-81	s METAL 7.5K 5% 16W
R225	1-220-193-81	s METAL 7.5K 5% 16W
R226	1-218-968-11	s METAL 18K 5% 1/16W
R227	1-220-193-81	s METAL 7.5K 5% 16W
R228	1-216-835-11	s METAL, CHIP 15K 5% 1/16W
R229	1-216-833-11	s METAL, CHIP 10K 5% 1/16W
R230	1-216-809-11	s METAL, CHIP 100 5% 1/16W
R231	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R232	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R233	1-216-830-11	s METAL, CHIP 5.6K 5% 1/16W
R234	1-216-830-11	s METAL, CHIP 5.6K 5% 1/16W
R235	1-216-791-11	s METAL, CHIP 3.3 5% 1/16W
R236	1-216-791-11	s METAL, CHIP 3.3 5% 1/16W
R237	1-216-827-11	s METAL, CHIP 3.3K 5% 1/16W
R238	1-216-827-11	s METAL, CHIP 3.3K 5% 1/16W
R239	1-216-827-11	s METAL, CHIP 3.3K 5% 1/16W

NOTE: Please see pages 7-10 for the parts that are not listed in the parts list.

(RF-53 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
R240	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R301	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R302	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R303	1-216-841-11	s METAL, CHIP 47K 5% 1/16W

SSP-8 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-8275-316-A	o MOUNTED CIRCUIT BOARD, SSP-8 (This assembly includes the following parts.)
1pc	1-563-180-11	o HOUSING, 6P
3pcs	4-924-029-11	s WASHER
BT101	1-528-229-11	o BATTERY, LITHIUM CR-2450
BZ101	1-529-025-00	s BUZZER
C102	1-136-165-00	s FILM 0.1uF 5% 50V
C104	1-126-157-11	s ELECT 10uF 20% 16V
C113	1-128-057-11	s ELECT 330uF 20% 6.3V
C118	1-125-447-11	s DOUBLE LAYERS 1FARAD 5.5V
C119	1-125-447-11	s DOUBLE LAYERS 1FARAD 5.5V
C136	1-126-160-11	s ELECT 1uF 20% 50V
C137	1-126-160-11	s ELECT 1uF 20% 50V
C139	1-126-160-11	s ELECT 1uF 20% 50V
C140	1-126-160-11	s ELECT 1uF 20% 50V
C156	1-126-157-11	s ELECT 10uF 20% 16V
C162	1-128-057-11	s ELECT 330uF 20% 6.3V
C164	1-126-940-11	s ELECT 330uF 20% 16V
C175	1-164-081-11	s CERAMIC 470pF 10% 50V
C176	1-164-081-11	s CERAMIC 470pF 10% 50V
C177	1-164-081-11	s CERAMIC 470pF 10% 50V
C178	1-164-081-11	s CERAMIC 470pF 10% 50V
C179	1-164-081-11	s CERAMIC 470pF 10% 50V
C180	1-164-081-11	s CERAMIC 470pF 10% 50V
C181	1-164-081-11	s CERAMIC 470pF 10% 50V
C182	1-164-081-11	s CERAMIC 470pF 10% 50V
C183	1-164-081-11	s CERAMIC 470pF 10% 50V
C184	1-164-081-11	s CERAMIC 470pF 10% 50V
C185	1-164-081-11	s CERAMIC 470pF 10% 50V
C305	1-128-057-11	s ELECT 330uF 20% 6.3V
C323	1-128-057-11	s ELECT 330uF 20% 6.3V
C505	1-128-057-11	s ELECT 330uF 20% 6.3V
C526	1-128-057-11	s ELECT 330uF 20% 6.3V
C701	1-126-160-11	s ELECT 1uF 20% 50V
C702	1-128-057-11	s ELECT 330uF 20% 6.3V
C703	1-126-940-11	s ELECT 330uF 20% 16V
C704	1-126-940-11	s ELECT 330uF 20% 16V
C705	1-128-057-11	s ELECT 330uF 20% 6.3V
C706	1-126-157-11	s ELECT 10uF 20% 16V
C707	1-126-160-11	s ELECT 1uF 20% 50V
C708	1-136-169-00	s MYLAR 0.22uF 5% 50V
C709	1-136-169-00	s MYLAR 0.22uF 5% 50V
C713	1-136-177-00	s FILM 1uF 5% 50V
C714	1-126-157-11	s ELECT 10uF 20% 16V
C715	1-164-346-11	s CERAMIC 1uF 16V
C721	1-128-057-11	s ELECT 330uF 20% 6.3V
C724	1-128-057-11	s ELECT 330uF 20% 6.3V
C728	1-128-057-11	s ELECT 330uF 20% 6.3V
C733	1-128-057-11	s ELECT 330uF 20% 6.3V
C736	1-128-057-11	s ELECT 330uF 20% 6.3V
C738	1-128-057-11	s ELECT 330uF 20% 6.3V
C742	1-128-057-11	s ELECT 330uF 20% 6.3V
C746	1-128-057-11	s ELECT 330uF 20% 6.3V
C751	1-128-057-11	s ELECT 330uF 20% 6.3V
C765	1-164-096-11	s CERAMIC 0.01uF 50V
C766	1-128-057-11	s ELECT 330uF 20% 6.3V

(SSP-8 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
C767	1-162-806-11	s CERAMIC 0.1uF 10% 50V
C768	1-162-806-11	s CERAMIC 0.1uF 10% 50V
C769	1-162-806-11	s CERAMIC 0.1uF 10% 50V
C770	1-162-806-11	s CERAMIC 0.1uF 10% 50V
C902	1-128-057-11	s ELECT 330uF 20% 6.3V
C904	1-128-057-11	s ELECT 330uF 20% 6.3V
C908	1-128-057-11	s ELECT 330uF 20% 6.3V
C910	1-128-057-11	s ELECT 330uF 20% 6.3V
C912	1-128-057-11	s ELECT 330uF 20% 6.3V
C914	1-128-057-11	s ELECT 330uF 20% 6.3V
C916	1-128-057-11	s ELECT 330uF 20% 6.3V
C918	1-128-057-11	s ELECT 330uF 20% 6.3V
C922	1-128-057-11	s ELECT 330uF 20% 6.3V
C924	1-128-057-11	s ELECT 330uF 20% 6.3V
C926	1-128-057-11	s ELECT 330uF 20% 6.3V
C928	1-128-057-11	s ELECT 330uF 20% 6.3V
CN102	1-506-472-11	s CONNECTOR 7P, MALE
CN103	1-506-683-11	s CONNECTOR, PS 16P, MALE
CN104	1-564-001-11	o CONNECTOR 2P, MALE
CN302	1-506-480-11	s CONNECTOR 15P, MALE
CN701	1-508-797-00	o PIN, CONNECTOR 4P
CN702	1-508-797-00	o PIN, CONNECTOR 4P
CN703	1-508-797-00	o PIN, CONNECTOR 4P
CN706	1-506-468-11	s CONNECTOR 3P, MALE
CN709	1-506-474-11	s CONNECTOR 9P, MALE
CN712	1-506-480-11	s CONNECTOR 15P, MALE
CNI103	1-540-080-11	s SOCKET, IC (IC113) 68P
CNI112	1-251-103-11	o SOCKET, IC 40PY
CNI301	1-540-080-11	s SOCKET, IC (IC113) 68P
CNI307	1-251-103-11	o SOCKET, IC 40PY
CNI501	1-540-080-11	s SOCKET, IC (IC113) 68P
CNI509	1-251-103-11	o SOCKET, IC 40PY
CP101	1-577-171-11	s CRYSTAL 16.00MHz
CP102	1-415-502-11	s DELAY LINE 100ns
CP701	1-760-149-21	s CRYSTAL 49.1520MHz
CP702	1-760-148-21	s CRYSTAL 37.6320MHz
D101	8-719-028-74	s DIODE NSQ03A04
D102	8-719-028-74	s DIODE NSQ03A04
D103	8-719-028-74	s DIODE NSQ03A04
D104	8-719-028-74	s DIODE NSQ03A04
D105	8-719-028-74	s DIODE NSQ03A04
D106	8-719-989-22	s LED CL-150R-CD, RED
D107	8-719-989-22	s LED CL-150R-CD, RED
D108	8-719-987-41	s LED CL-150Y-CD, AMBER
D109	8-719-987-43	s LED CL-150PG-CD, GRN
D701	8-719-911-19	s DIODE 1SS119
D702	8-719-911-19	s DIODE 1SS119
D703	8-719-911-19	s DIODE 1SS119
D704	8-719-911-19	s DIODE 1SS119
D705	8-719-911-19	s DIODE 1SS119
D706	8-719-911-19	s DIODE 1SS119
FB701	1-412-694-11	s INDUCTOR BEED
IC101	8-759-925-74	s IC TC74HC04NS
IC102	8-759-973-71	s IC TL7705CPS-B
IC103	8-759-151-34	s IC UPD70216L-10
IC104	8-759-170-54	s IC CKD8830Q
IC105	8-759-929-77	s IC SN74LS03NS

NOTE: Please see pages 7-10 for the parts that are not listed in the parts list.

(SSP-8 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
IC106	8-752-338-23 s	IC CXK581100TM-10LL
IC107	8-752-338-23 s	IC CXK581100TM-10LL
IC108	8-759-171-48 s	IC CXD8326Q
IC109	8-759-927-46 s	IC SN74HC00NS
IC110	8-759-973-43 s	IC MB8421-90LPFQ
IC111	8-759-510-88 s	IC MB8431-90LPFQ
IC114	8-759-926-06 s	IC SN74HC126NS
IC115	8-759-174-34 s	IC ST93CS56M1013TR
IC116	8-759-164-72 s	IC UPD71101GD-10-5BB
IC117	8-759-922-44 s	IC MSM5832RS
IC118	8-759-925-76 s	IC SN74HC08NS
IC119	8-759-925-90 s	IC SN74HC74NS
IC120	8-759-925-80 s	IC SN74HC14NS
IC121	8-759-166-98 s	IC LT1134CS-E1
IC122	8-759-926-82 s	IC SN74HC574ANS
IC123	8-759-926-82 s	IC SN74HC574ANS
IC124	8-759-925-85 s	IC SN74HC32NS
IC125	8-759-171-49 s	IC UPD72020GC-8-3B6
IC126	8-759-939-28 s	IC CXD1102Q
IC127	8-752-337-91 s	IC CXK58257ATM-70LL
IC128	8-752-337-91 s	IC CXK58257ATM-70LL
IC129	8-759-251-49 o	IC PALCE16V8Q-25JC-VIF
IC131	8-759-149-10 s	IC UPD4702G
IC132	8-759-948-58 s	IC 74F244SJ
IC133	8-759-500-05 s	IC MSM6338MS-K
IC134	8-759-926-77 s	IC SN74HC541NS
IC135	8-759-149-10 s	IC UPD4702G
IC136	8-759-149-10 s	IC UPD4702G
IC301	8-759-151-34 s	IC UPD70216L-10
IC302	8-759-170-54 s	IC CXD8830Q
IC303	8-759-926-12 s	IC SN74HC139NS
IC304	8-759-925-74 s	IC TC74HC04NS
IC305	8-752-337-91 s	IC CXK58257ATM-70LL
IC306	8-752-337-91 s	IC CXK58257ATM-70LL
IC308	8-759-925-72 s	IC SN74HC02NS
IC309	8-759-926-06 s	IC SN74HC126NS
IC310	8-759-149-09 s	IC UPD71059GB-10-3B4
IC311	8-759-149-07 s	IC UPD71054GB-10-3B4
IC312	8-759-925-85 s	IC SN74HC32NS
IC313	8-759-154-60 s	IC UPD71055GB-10-3B4
IC314	8-759-926-82 s	IC SN74HC574ANS
IC316	8-759-051-53 s	IC TD62381F
IC317	8-759-170-56 s	IC CXD8828Q
IC318	8-759-926-52 s	IC SN74HC257NS
IC319	8-759-925-90 s	IC SN74HC74NS
IC501	8-759-151-34 s	IC UPD70216L-10
IC502	8-759-170-54 s	IC CXD8830Q
IC503	8-759-925-82 s	IC SN74HC21NS
IC504	8-759-925-74 s	IC TC74HC04NS
IC505	8-759-973-43 s	IC MB8421-90LPFQ
IC506	8-759-510-88 s	IC MB8431-90LPFQ
IC507	8-752-337-91 s	IC CXK58257ATM-70LL
IC508	8-752-337-91 s	IC CXK58257ATM-70LL
IC510	8-759-925-72 s	IC SN74HC02NS
IC511	8-759-926-06 s	IC SN74HC126NS
IC512	8-759-149-09 s	IC UPD71059GB-10-3B4
IC513	8-759-925-85 s	IC SN74HC32NS
IC514	8-759-149-07 s	IC UPD71054GB-10-3B4
IC515	8-759-926-82 s	IC SN74HC574ANS

(SSP-8 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
IC517	8-759-170-56 s	IC CXD8828Q
IC701	8-759-708-05 s	IC NJM78L05A
IC702	8-752-306-51 s	IC CX23065A
IC703	8-759-923-65 s	IC AM26LS31CNS
IC704	8-759-923-64 s	IC AM26LS32ACNS
IC705	8-759-925-74 s	IC TC74HC04NS
IC706	8-759-931-43 s	IC SN74LS624NS
IC707	8-752-337-91 s	IC CXK58257ATM-70LL
IC708	8-752-352-24 s	IC CXD2605R
IC709	8-759-243-19 s	IC TC7SU04F
IC710	8-759-926-77 s	IC SN74HC541NS
IC711	8-752-337-91 s	IC CXK58257ATM-70LL
IC712	8-752-352-24 s	IC CXD2605R
IC713	8-759-243-19 s	IC TC7SU04F
IC714	8-752-337-91 s	IC CXK58257ATM-70LL
IC715	8-752-352-24 s	IC CXD2605R
IC716	8-759-243-19 s	IC TC7SU04F
IC717	8-759-925-76 s	IC SN74HC08NS
IC718	8-759-925-74 s	IC TC74HC04NS
IC719	8-759-170-55 s	IC CXD8829Q
IC720	8-759-925-90 s	IC SN74HC74NS
IC721	8-759-925-90 s	IC SN74HC74NS
IC722	8-759-925-90 s	IC SN74HC74NS
IC723	8-759-926-24 s	IC SN74HC164NS
IC724	8-759-926-24 s	IC SN74HC164NS
IC725	8-759-926-24 s	IC SN74HC164NS
IC726	8-759-926-24 s	IC SN74HC164NS
IC727	8-759-926-24 s	IC SN74HC164NS
IC728	8-759-926-26 s	IC SN74HC166NS
IC729	8-759-926-26 s	IC SN74HC166NS
IC730	8-759-926-26 s	IC SN74HC166NS
IC731	8-759-926-26 s	IC SN74HC166NS
IC732	8-759-038-46 s	IC TC7S00F-TE85L
IC733	8-759-038-46 s	IC TC7S00F-TE85L
IC734	8-759-038-46 s	IC TC7S00F-TE85L
IC901	8-759-254-77 s	IC CXD8864Q
IC902	8-759-043-71 s	IC TMS44400-80SD
IC903	8-759-043-71 s	IC TMS44400-80SD
IC904	8-759-043-71 s	IC TMS44400-80SD
IC905	8-759-043-71 s	IC TMS44400-80SD
IC906	8-759-254-77 s	IC CXD8864Q
IC907	8-759-043-71 s	IC TMS44400-80SD
IC908	8-759-043-71 s	IC TMS44400-80SD
IC909	8-759-043-71 s	IC TMS44400-80SD
IC910	8-759-043-71 s	IC TMS44400-80SD
IC911	8-752-343-18 s	IC CXD2704Q
IC912	8-752-343-18 s	IC CXD2704Q
IC913	8-752-343-18 s	IC CXD2704Q
L701	1-410-482-31 s	INDUCTOR 100uH
L702	1-410-482-31 s	INDUCTOR 100uH
L703	1-410-482-31 s	INDUCTOR 100uH
L704	1-410-482-31 s	INDUCTOR 100uH
L705	1-412-533-21 s	INDUCTOR 47uF
ND301	8-719-951-37 s	LED LA-301VB, RED
ND501	8-719-951-37 s	LED LA-301VB, RED
S102	1-692-535-11 s	SWITCH, DIP 8-CKT
T701	1-437-194-21 s	TRANSFORMER, PULSE

NOTE: Please see pages 7-10 for the parts that are not listed in the parts list.

(SSP-8 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
X101	1-567-862-11	s CRYSTAL, 4.9152MHZ
X102	1-577-110-11	s CRYSTAL 20MHz
X103	1-567-098-00	s CRYSTAL 32.76800MHz
X301	1-577-110-11	s CRYSTAL 20MHz
X501	1-577-110-11	s CRYSTAL 20MHz
X701	1-567-815-11	s CRYSTAL 22.5792MHz

SV-147 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-8310-133-A	o MOUNTED CIRCUIT BOARD, SV-147 (This assembly includes the following parts.)
4pcs	3-374-740-01	s BRACKET, LED
C1	1-164-489-11	s CERAMIC, CHIP 0.22uF 10% 16V
C5	1-162-969-11	s CERAMIC, CHIP 0.0068uF 10% 25V
C7	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C8	1-164-227-11	s CERAMIC, CHIP 0.022uF 10% 25V
C9	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C10	1-162-965-11	s CERAMIC, CHIP 0.0015uF 10% 50V
C11	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C13	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C14	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C15	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C20	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C21	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C22	1-162-965-11	s CERAMIC, CHIP 0.0015uF 10% 50V
C23	1-162-965-11	s CERAMIC, CHIP 0.0015uF 10% 50V
C24	1-164-227-11	s CERAMIC, CHIP 0.022uF 10% 25V
C25	1-164-227-11	s CERAMIC, CHIP 0.022uF 10% 25V
C26	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C27	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C28	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C29	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C30	1-162-916-11	s CERAMIC, CHIP 12PF 5% 50V
C31	1-162-916-11	s CERAMIC, CHIP 12PF 5% 50V
C32	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C33	1-162-964-11	s CERAMIC, CHIP 0.001uF 10% 50V
C34	1-162-966-11	s CERAMIC, CHIP 0.0022uF 10% 50V
C35	1-164-227-11	s CERAMIC, CHIP 0.022uF 10% 25V
C36	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C38	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C39	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C40	1-128-397-21	s ELECT 100uF 20% 16V
C41	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C42	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C43	1-128-397-21	s ELECT 100uF 20% 16V
C44	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C45	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C47	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C48	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C49	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C52	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C53	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C54	1-128-397-21	s ELECT 100uF 20% 16V
C55	1-128-397-21	s ELECT 100uF 20% 16V
C56	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C57	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C58	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C59	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C60	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C61	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C62	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C63	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C64	1-162-968-11	s CERAMIC, CHIP 0.0047uF 10% 50V
CN1	1-691-419-11	o HOUSING, 8P
CN2	1-566-532-11	s CONNECTOR, FPC 16P
CN3	1-566-195-11	o CONNECTOR, PIN 2P, MALE

NOTE: Please see pages 7-10 for the parts that are not listed in the parts list.

(SV-147 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
CN4	1-566-526-11	s CONNECTOR, 10P
CN5	1-566-524-11	s CONNECTOR, FPC (ZIF) 8P
CN6	1-569-529-11	o HOUSING, 14P
CN7	1-506-479-11	s CONNECTOR 14P, MALE
CN8	1-566-534-11	s CONNECTOR, FPC (ZIF) 18P
CN10	1-566-526-11	s CONNECTOR, 10P
CN11	1-506-485-11	s CONNECTOR 6P, MALE
D1	8-719-016-38	s LED LN1351C6, GRN
D2	8-719-016-38	s LED LN1351C6, GRN
D3	8-719-016-38	s LED LN1351C6, GRN
D4	8-719-980-38	s DIODE SB07-03C
D5	8-719-980-38	s DIODE SB07-03C
D6	8-719-037-59	s LED LN210RP, RED
D7	8-719-037-60	s LED LN410YP, YEL
D8	8-719-018-39	s LED LN310GP, GRN
D9	8-719-037-60	s LED LN410YP, YEL
D10	8-719-400-18	s DIODE MA152WK
D11	8-719-400-18	s DIODE MA152WK
D12	8-719-400-18	s DIODE MA152WK
D13	8-719-400-18	s DIODE MA152WK
D14	8-719-980-38	s DIODE SB07-03C
D15	8-719-980-38	s DIODE SB07-03C
D16	8-719-400-18	s DIODE MA152WK
IC1	8-759-929-26	s IC TL431CPS
IC2	8-752-039-31	s IC CXA1418N
IC3	8-752-038-71	s IC CXA1127AM
IC4	8-759-100-94	s IC UPC358G2
IC5	8-759-925-90	s IC SN74HC74NS
IC6	8-759-925-90	s IC SN74HC74NS
IC7	8-759-927-29	s IC SN74HC04NS
IC8	8-759-926-77	s IC SN74HC541NS
IC9	8-752-851-04	s IC CXP875P40Q-PCME77
IC10	8-759-998-49	s IC MB3771PF
IC11	8-759-245-52	s IC TA7291F
IC12	8-759-551-68	s IC M6M80021FP
IC13	8-759-300-71	s IC HD14053BFP
IC14	8-759-926-06	s IC SN74HC126NS
IC15	8-759-823-87	s IC LB1638M
IC16	8-759-100-94	s IC UPC358G2
IC17	8-759-150-61	s IC UPC78L05T
IC18	8-759-150-61	s IC UPC78L05T
L1	1-410-381-11	s INDUCTOR CHIP 100H
L2	1-410-381-11	s INDUCTOR CHIP 100H
Q1	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q2	8-729-140-75	s TRANSISTOR 2SD999
Q3	8-729-901-00	s TRANSISTOR DTC124EK
Q4	8-729-901-00	s TRANSISTOR DTC124EK
Q5	8-729-140-75	s TRANSISTOR 2SD999
Q6	8-729-140-75	s TRANSISTOR 2SD999
Q7	8-729-901-00	s TRANSISTOR DTC124EK
Q8	8-729-901-00	s TRANSISTOR DTC124EK
Q9	8-729-901-00	s TRANSISTOR DTC124EK
Q10	8-729-901-00	s TRANSISTOR DTC124EK
Q11	8-729-901-00	s TRANSISTOR DTC124EK
Q12	8-729-901-00	s TRANSISTOR DTC124EK
Q13	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q14	8-729-017-58	s TRANSISTOR 2SB1323

(SV-147 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
Q15	8-729-140-75	s TRANSISTOR 2SD999
Q16	8-729-901-00	s TRANSISTOR DTC124EK
Q17	8-729-901-00	s TRANSISTOR DTC124EK
Q18	8-729-901-00	s TRANSISTOR DTC124EK
R1	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R2	1-218-736-11	s METAL 68K 0.50% 1/16W
R3	1-218-736-11	s METAL 68K 0.50% 1/16W
R4	1-216-635-11	s METAL, CHIP 220 0.5% 1/10W
R5	1-216-635-11	s METAL, CHIP 220 0.5% 1/10W
R6	1-216-853-11	s METAL, CHIP 470K 5% 1/16W
R7	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R8	1-218-716-11	s METAL 10K 0.50% 1/16W
R9	1-218-700-11	s METAL 2.2K 0.50% 1/16W
R10	1-216-651-11	s METAL, CHIP 1K 0.5% 1/10W
R11	1-218-698-11	s METAL, CHIP 1.8K 0.50% 1/16W
R12	1-218-845-11	s METAL 820 0.50% 1/16W
R13	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R14	1-216-651-11	s METAL, CHIP 1K 0.5% 1/10W
R15	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R16	1-218-716-11	s METAL 10K 0.50% 1/16W
R17	1-216-793-11	s METAL, CHIP 4.7 5% 1/16W
R18	1-216-793-11	s METAL, CHIP 4.7 5% 1/16W
R19	1-216-793-11	s METAL, CHIP 4.7 5% 1/16W
R20	1-216-651-11	s METAL, CHIP 1K 0.5% 1/10W
R21	1-216-635-11	s METAL, CHIP 220 0.5% 1/10W
R22	1-216-635-11	s METAL, CHIP 220 0.5% 1/10W
R23	1-216-651-11	s METAL, CHIP 1K 0.5% 1/10W
R24	1-216-651-11	s METAL, CHIP 1K 0.5% 1/10W
R25	1-218-716-11	s METAL 10K 0.50% 1/16W
R26	1-218-716-11	s METAL 10K 0.50% 1/16W
R27	1-218-716-11	s METAL 10K 0.50% 1/16W
R28	1-218-716-11	s METAL 10K 0.50% 1/16W
R29	1-216-635-11	s METAL, CHIP 220 0.5% 1/10W
R30	1-218-716-11	s METAL 10K 0.50% 1/16W
R31	1-218-716-11	s METAL 10K 0.50% 1/16W
R32	1-216-635-11	s METAL, CHIP 220 0.5% 1/10W
R33	1-216-635-11	s METAL, CHIP 220 0.5% 1/10W
R34	1-216-635-11	s METAL, CHIP 220 0.5% 1/10W
R35	1-216-857-11	s METAL, CHIP 1M 5% 1/16W
R36	1-218-313-11	s METAL, CHIP 560 1% 1/16W
R37	1-216-809-11	s METAL, CHIP 100 5% 1/16W
R38	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R39	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R40	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R41	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R42	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R43	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R44	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R45	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R46	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R47	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R48	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R49	1-216-809-11	s METAL, CHIP 100 5% 1/16W
R50	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R51	1-218-736-11	s METAL 68K 0.50% 1/16W
R52	1-218-716-11	s METAL 10K 0.50% 1/16W
R53	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R54	1-216-829-11	s METAL, CHIP 4.7K 5% 1/16W
R55	1-218-716-11	s METAL 10K 0.50% 1/16W

NOTE: Please see pages 7-10 for the parts that are not listed in the parts list.

(SV-147 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
R56	1-218-706-11	s METAL, CHIP 3.9K 0.50% 1/16W
R57	1-218-716-11	s METAL 10K 0.50% 1/16W
R58	1-216-829-11	s METAL, CHIP 4.7K 5% 1/16W
R59	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R60	1-218-700-11	s METAL 2.2K 0.50% 1/16W
R61	1-218-736-11	s METAL 68K 0.50% 1/16W
R62	1-218-700-11	s METAL 2.2K 0.50% 1/16W
R63	1-218-700-11	s METAL 2.2K 0.50% 1/16W
R64	1-218-716-11	s METAL 10K 0.50% 1/16W
R65	1-218-716-11	s METAL 10K 0.50% 1/16W
R66	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R67	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R68	1-218-698-11	s METAL, CHIP 1.8K 0.50% 1/16W
R69	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R70	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R71	1-218-716-11	s METAL 10K 0.50% 1/16W
R72	1-216-809-11	s METAL, CHIP 100 5% 1/16W
R73	1-218-744-11	s METAL 150K 0.50% 1/16W
R74	1-216-809-11	s METAL, CHIP 100 5% 1/16W
R75	1-218-867-11	s METAL 6.8K 0.50% 1/16W
R76	1-218-867-11	s METAL 6.8K 0.50% 1/16W
R77	1-218-724-11	s METAL 22K 0.50% 1/16W
R78	1-218-724-11	s METAL 22K 0.50% 1/16W
R79	1-216-635-11	s METAL, CHIP 220 0.5% 1/10W
R80	1-216-809-11	s METAL, CHIP 100 5% 1/16W
R81	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R82	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R83	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R84	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R85	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R86	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R87	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R88	1-215-907-11	s METAL 22 5% 3W
R89	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R90	1-216-837-11	s METAL, CHIP 22K 5% 1/16W
S1	1-570-598-11	s SWITCH, DIP 4-CKT
X1	1-579-962-21	s CRYSTAL 22.5792MHZ

VR-154 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-650-078-11	o PRINTED CIRCUIT BOARD, VR-154
S1	1-467-523-11	s ENCODER, ROTARY

VR-181 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-650-079-11	o PRINTED CIRCUIT BOARD, VR-181
S1	1-467-523-11	s ENCODER, ROTARY

TENREGI BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-648-982-11	o PRINTED CIRCUIT BOARD, TENREGI
D1	8-719-821-03	s ELEMENT, HALL THS117

NOTE: Please see pages 7-10 for the parts that are not listed in the parts list.

FRAME

Ref. No. or Q'ty	Part No.	SP Description
1pc	△1-251-148-11	s INLET, AC (3P)
1pc	△1-413-647-11	s SWITCHING REGULATOR
1pc	1-466-954-11	s DISPLAY UNIT, EL
1pc	1-466-955-11	s ENCODER, ROTARY
1pc	1-467-524-11	o KEY BOARD UNIT
4pcs	1-500-082-11	s FILTER, CLAMP (FERRITE CORE)
1pc	1-532-827-11	s FUSE (MT4-3A-N1)
1pc	1-543-793-11	s FILTER, CLAMP (FERRITE CORE)
1pc	1-544-578-11	s SPEAKER
2pcs	△1-560-764-21	o CONTACT, FEMALE AWG18-24
1pc	△1-562-817-11	o HOUSING, CONNECTOR 2P
2pcs	△1-565-787-21	o CONTACT, RECEPTACLE 1P
1pc	1-570-028-11	s SWITCH, MICRO
1pc	△1-570-455-11	s SWITCH, AC POWER SEESAW
1pc	1-698-239-11	s MOTOR, DC FAN
1pc	1-952-582-11	o HARNESS, SUB (EL)

7-4. ACCESSORIES SUPPLIED

Ref. No. or Q'ty	Part No.	SP Description
1pc	△1-534-754-00	s CORD, POWER (For J)
1pc	△1-551-812-11	s CORD, POWER (For UC)
1pc	△1-590-910-11	s CORD, SET POWER (For EK)

NOTE: Please see pages 7-10 for the parts that are not listed in the parts list.

SONY®

DAT DUAL DECK EDITOR

PCM-E7700

SUPPLEMENT-1

対象マニュアル:

APPLICABLE MANUAL:

PCM-E7700 (J)(UC)(EK) OPERATION AND MAINTENANCE MANUAL
1st Edition (9-976-774-01)

対象シリアルナンバー:

APPLICABLE Serial No.:

PCM-E7700 (J) : 10001 以降
PCM-E7700 (UC): 20001 以降
PCM-E7700 (EK): 50001 以降

内容:

SUBJECT:

目次: 差し替え

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この追加版-1を、お持ちのOPERATION AND MAINTENANCE MANUALに追加および差し替えて御使用
ください。

Please replace and add this SUPPLEMENT-1 manual to your own OPERATION AND MAINTENANCE
MANUAL.

OPERATION AND MAINTENANCE MANUAL Part 2

PCM-E7700 (J)

PCM-E7700 (UC)

PCM-E7700 (EK, 和, 英)

9-976-774-81

Sony Corporation

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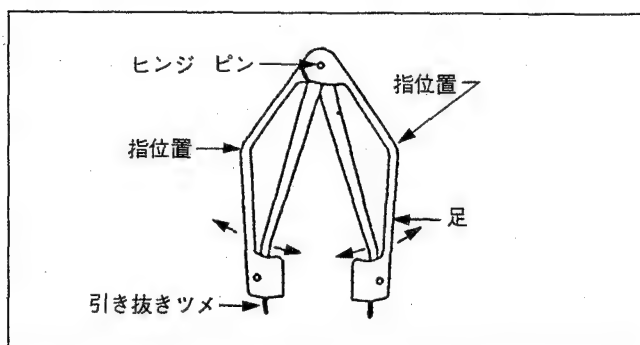
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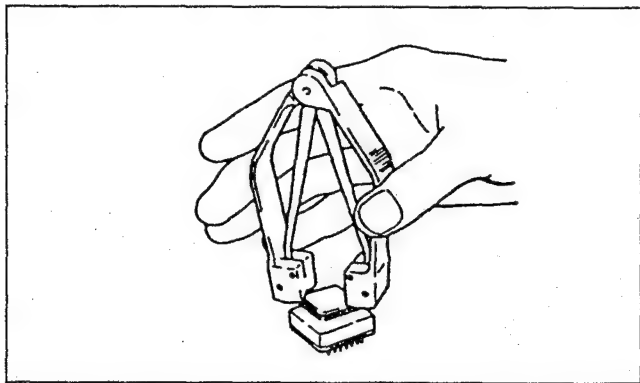
ICソケットに差し込まれたPLCCタイプのICを取り外す場合は、下記の工具を使用することを推奨します。20～124ピンまでのピン数のICに利用できます。

PLCCソケット用引き抜き工具
ソニー部品番号J-6035-070-A

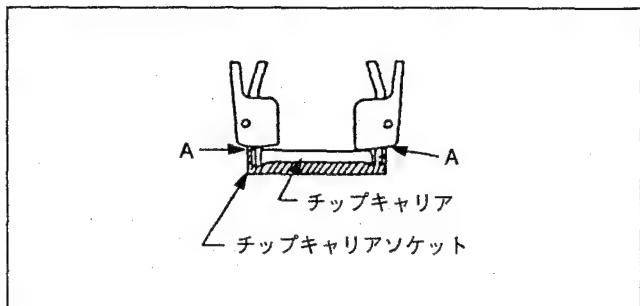


注意：・引き抜き工具でICチップを上方に引っ張らないこと。
・必要以上の力で工具をはさみ込まないこと。

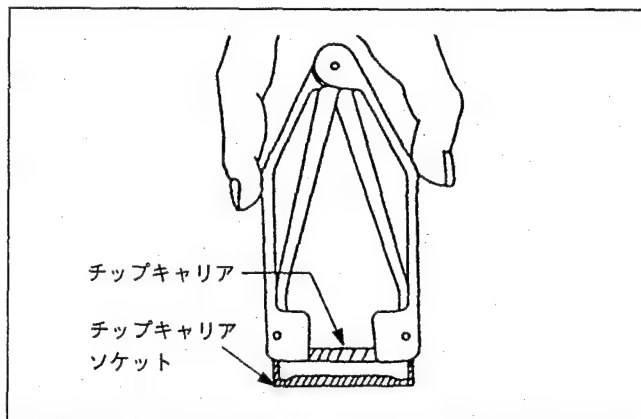
1. 工具の足をソケットのスロットの長さに合わせます。



2. 工具の先端の引き抜きツメをICソケットのスロットに差し込み、引き抜き工具の図に示すAの部分がソケットにあたるまで押し込みます。



3. 図のように引き抜き工具のリブの部分を持ちます。ソケットには下方向に小さな力がかかります。



4. 引き抜き工具をはさみ込みます。これにより、工具の足が伸びると同時に、工具の先端のツメがICチップをつかみ、上方向に引き抜きます。
5. 引き抜いた後、力をゆるめ、ICチップを引き抜き工具から外します。

1-5. サービスメニュー

サービスメニュー項目一覧

サービスメニュー

- 1. PLAYER MECHANICAL DECK ADJUSTMENT
 - 1. SERVO DATA PRESET(サーボデータプリセット)
 - 2. PLUNGER CHECK(プランジャーテスト)
 - 3. MECHANICAL DEVICE TEST(デバイステスト)
 - 4. RECOGNITION SWITCH CHECK(カセットホールスイッチテスト)
 - 5. END SENSOR LEVEL CHECK(HIGH)(エンドセンサーレベル確認-1)
 - 6. END SENSOR LEVEL CHECK(LOW)(エンドセンサーレベル確認-2)
 - 7. DEW SENSOR CHECK(結露センサーレベル確認)
 - 8. REEL TORQUE CHECK(リールトルク確認)
 - 9. FWD/RVS TORQUE ADJUSTMENT(FWD/REVトルク調整)
 - 10. DRUM/CAPSTAN SPEED & WOW CHECK (キャプスタンスピード、ワウフラッター確認)
 - 11. TAPE PATH ADJUSTMENT(テープパス調整)
 - 12. SWP POSITION ADJUSTMENT(SWP位置調整)
 - 13. PATH & FF/REW TIME CHECK(テープパス、FF/REW時間確認)
 - 14. PB ERROR RATE CHECK(再生エラーレート確認)
 - 15. -----
 - 16. -----
 - 17. -----
 - 18. SERVO DATA SAVE(サーボデータ保存)
 - 19. SERVO DATA DISPLAY(サーボデータ表示)
- 2. RECORDER MECHANICAL DECK ADJUSTMENT
 - 1. SERVO DATA PRESET(サーボデータプリセット)
 - 2. PLUNGER CHECK(プランジャーテスト)
 - 3. MECHANICAL DEVICE TEST(デバイステスト)
 - 4. RECOGNITION SWITCH CHECK(カセットホールスイッチテスト)
 - 5. END SENSOR LEVEL CHECK(HIGH)(エンドセンサーレベル確認-1)
 - 6. END SENSOR LEVEL CHECK(LOW)(エンドセンサーレベル確認-2)
 - 7. DEW SENSOR CHECK(結露センサーレベル確認)
 - 8. REEL TORQUE CHECK(リールトルク確認)
 - 9. FWD/RVS TORQUE ADJUSTMENT(FWD/REVトルク調整)
 - 10. DRUM/CAPSTAN SPEED & WOW CHECK (キャプスタンスピード、ワウフラッター確認)
 - 11. TAPE PATH ADJUSTMENT(テープパス調整)
 - 12. SWP POSITION ADJUSTMENT(SWP位置調整)
 - 13. PATH & FF/REW TIME CHECK(テープパス、FF/REW時間確認)
 - 14. PB ERROR RATE CHECK(再生エラーレート確認)
 - 15. REC CURRENT ADJUSTMENT(LEADING)(先行ヘッド記録電流調整)
 - 16. REC CURRENT ADJUSTMENT(TRAILING)(後行ヘッド記録電流調整)
 - 17. REC/PB ERROR RATE CHECK(自己録再エラーレート確認)
 - 18. SERVO DATA SAVE(サーボデータ保存)
 - 19. SERVO DATA DISPLAY(サーボデータ表示)
- 3. TEST
 - 1. KEY/DIAL(キー/ダイヤル)
 - 2. EL/LED(ELディスプレイ/LED)
 - 3. RS-232C
 - 4. SSP-8 SIGNAL PATH(SSP-8基板オーディオ信号経路)
- 4. INFORMATION
 - 1. HOUR METER(アワーメーター)
 - 2. TAPE(テープ再生データ)
 - 3. DIGITAL AUDIO INPUT(デジタルオーディオ入力信号)
 - 4. KEY/WARNING LOG(キー/ワーニング履歴)
 - 5. VERSION(バージョン) (V2.00~)

サービスメニューは、下記のメニューで構成されている。

- "1. PLAYER MECHANICAL DECK ADJUSTMENT"メニュー
: プレーヤーメカデッキの調整、テストを行う。
- "2. RECORDER MECHANICAL DEC ADJUSTMENT"メニュー
: レコーダーメカデッキの調整、テストを行う。
- "3. TEST"メニュー
: 自己診断を行う。
- "4. INFORMATION"メニュー
: アワーメーターやテープ情報などの各種情報を表示する。

サービスメニューへの入り方

- (1) 電源をONし、**[SHIFT]**キーを押しながら**[MODE]**キーを押す。サービスメニュー初期画面になる。
- (2) 各メニューに対応するファンクションキー(**[F1]**: [P-MD], **[F2]**: [R-MD], **[F3]**: [TEST], **[F4]**: [INFORM])を押す。

SERVICE MENU							
1. PLAYER MECHANICAL DECK ADJUSTMENT							
2. RECORDER MECHANICAL DECK ADJUSTMENT							
3. TEST							
4. INFORMATION							
P-MD R-MD TEST INFORM							
F1	F2	F3	F4	F5	F6	F7	

サービスメニュー初期画面

サービスメニューの抜け方

- (1) 調整/テスト/インフォメーションメニューから初期画面にもどるには、**[F2]**[EXIT]キーを押す。
- (2) 通常モードに復帰するには、電源をOFFし再びONにする。オーディオエディットモードになる。

1-5-1. "1.PLAYER MECHANICAL DECK ADJUSTMENT"メニュー

内容、調整方法等詳細は"第2章メカデッキの交換および調整"参照。

1-5-2. "2.RECORDER MECHANICAL DECK ADJUSTMENT"メニュー

内容、調整方法等詳細は"第2章メカデッキの交換および調整"参照。

1-5-3. "3. TEST"メニュー

テストメニューの項目

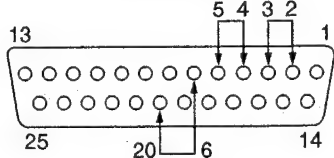
- 1 KEY/DIAL :キー/ダイヤル(サーチダイヤル、レベル/バランスつまみ)テスト
- 2 EL/DISPLAY :ELディスプレイ/LEDテスト
- 3 RS-232C :RS-232Cループバックテスト
- 4 SSP-8 SIGNAL PATH :SSP-8基板のオーディオ信号経路テスト

各テストメニューへの入り方

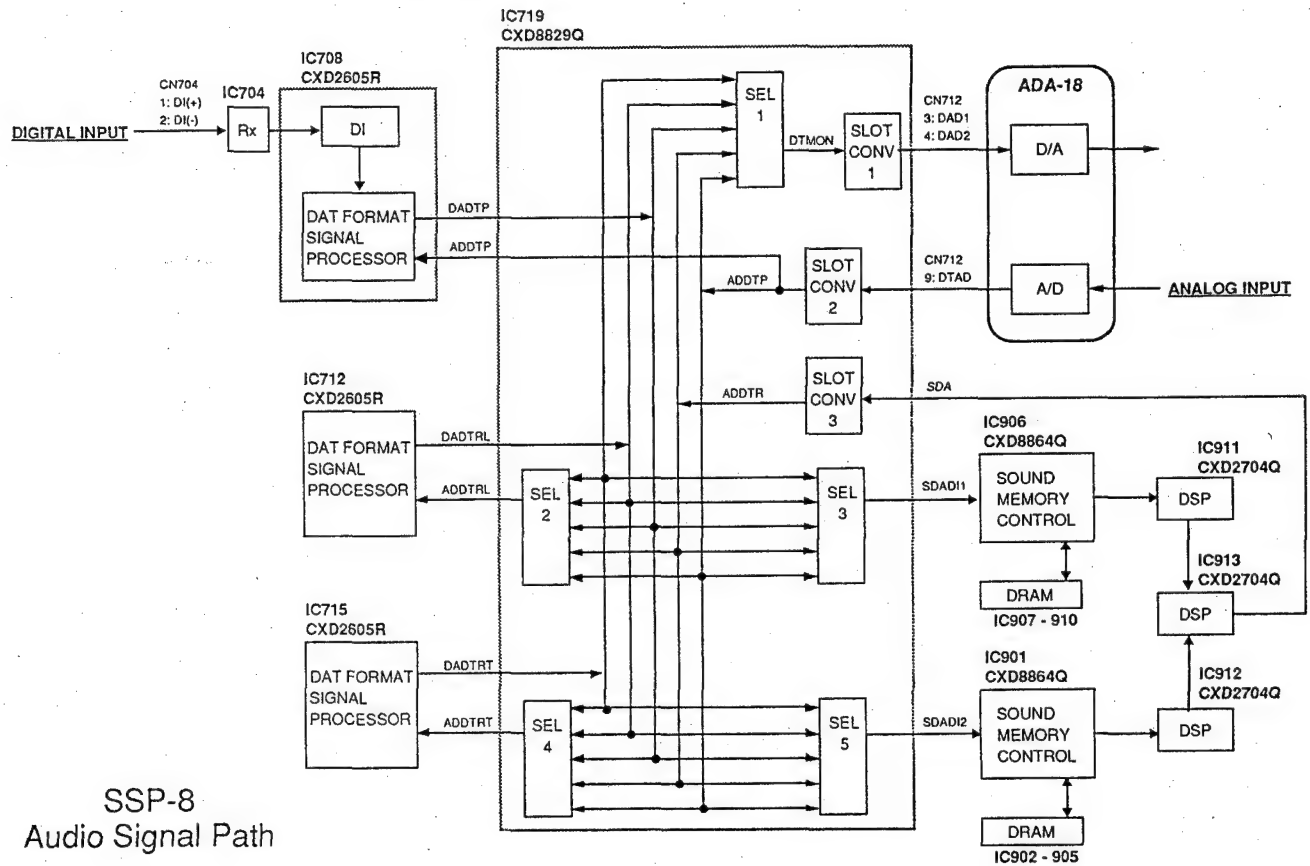
[↑]、**[↓]**キーで項目(テストメニュー)を選択し、**[F1]**[TEST ON]キーを押す。

SERVICE TEST							
① KEY/DIAL							
2 EL/DISPLAY							
3 RS-232C							
4 SSP-8 SIGNAL PATH							
TEST ON EXIT							
F1	F2	F3	F4	F5	F6	F7	

テストメニュー初期画面

メニュー項目	説 明
1 KEY/DIAL (キー/ダイヤルテスト)	<ul style="list-style-type: none"> • キーテスト(41箇所) : キーを押している間、ELディスプレイのキー表示(押したキー)が点灯し、離すと網掛け表示となる。 • ダイヤルテスト : JOGダイヤル、LEVEL/BALANCEつまみを回すと、回す方向により数値が+(増加)/-(減少)する。 <p>メニューの抜け方 [SHIFT] キーを押しながら、[F1] [TEST OFF] キーを押す。</p>
2 EL/DISPLAY (ELディスプレイ/LEDテスト)	<ul style="list-style-type: none"> • ELディスプレイ : ディスプレイ表示が全点灯→模様→全消灯を繰り返す。 • LED (21箇所) : すべて点灯する。 <p>メニューの抜け方 [F1] [TEST OFF] キーを押す。</p>
3 RS-232C (RS-232Cループバックテスト)	<p>RS-232Cのデータ送受信、コントロール信号の入・出力をチェックする。</p> <p>テスト方法</p> <p>(1) D-sub, 25ピン(オス)コネクタの 2ピン(TXD) ————— 3ピン(RXD) 4ピン(RTS) ————— 5ピン(CTS) 6ピン(DSR) ————— 20ピン(DTR) 間をそれぞれ接続したコネクタを用意し、PCM-E7700のRS-232C コネクタ(リアパネル)に差し込む。</p> <p>(2) [F3] [START] キーを押す。 テストが開始され、結果がディスプレイに表示される。 エラー(FAULT表示)の場合: SSP-8基板の下記箇所のいずれかが不良と想定される。</p> <ul style="list-style-type: none"> • IC116(UPD71101) : SCU(Serial Control Unit) • IC121(LT1134) : RS-232C Driver/Receiver • CN102または、ハーネスの断線 <p>メニューの抜け方 [F1] [TEST OFF] キーを押す。</p> <div style="text-align: right;"> <p>-WIRING SIDE-</p>  <p>D-sub (25ピン、オス)</p> </div>
4 SSP-8 SIGNAL PATH (SSP-8基板オーディオ信号経路テスト)	<p>アナログ/デジタル入力端子に異なるオーディオ信号を入力し、SSP-8基板のオーディオ信号経路を切り換えたときに、信号(音)が出力されるかどうかにより、信号経路のICをチェックする。</p> <p>テスト方法</p> <p>(1) アナログ/デジタル入力端子に異なるオーディオ信号を入力する。 (2) [F4]、[F5] キーで信号経路(PATH1~PATH12)を切り換えて、ディスプレイに表示されているアナログまたはデジタル入力信号(音)が出力されることを確認する。信号(音)が出力しない時は、ブロック図および表(1-9ページ)を使用して、不良ICを特定する。</p> <p>注意</p> <ol style="list-style-type: none"> 1. PATH-10とPATH-11は工場出荷時の検査用のため信号(音)は出力されない。 2. PATH-12ではアナログ/デジタル入力信号(音)にかかわらず内部DSPから1 kHzの信号が出力される。 <p>メニューの抜け方 [F1] [TEST OFF] キーを押す。</p>

オーディオ信号経路 ブロック図(SSP-8基板)



オーディオ信号経路番号と経路IC (SSP-8基板)

PATH NO.	A/D ANALOG	IC704 AM26LS32 DIGITAL	IC708 CXD2605	IC712 CXD2605	IC715 CXD2605	IC719 CXD8829									IC806 CXD8864	IC907- 910 DRAM	IC911 CXD2704	IC901 CXD8864	IC902- 905 DRAM	IC912 CXD2704	IC913 CXD2704	D/A
						SEL 1	SEL 2	SEL 3	SEL 4	SEL 5	CONV 1	CONV 2	CONV 3									
PATH-1	○					○					○	○							○			
PATH-2		○	○			○					○								○			
PATH-3		○	○			○		○			○		○	○		○			○	○		
PATH-4		○	○			○		○			○		○	○	○	○			○	○		
PATH-5	○		○			○					○	○								○		
PATH-6	○		○			○				○	○	○	○			○		○	○	○		
PATH-7	○		○			○				○	○	○	○			○	○	○	○	○		
PATH-8	○			○		○	○				○	○								○		
PATH-9	○				○	○			○		○	○								○		
PATH-10	○			○	○	○	○				○	○								○		
PATH-11	○		○	○		○	○				○	○								○		
PATH-12						○					○		○						○	○		

1-5-4. "4. INFORMATION" メニュー

インフォメーションメニューは、下記の項目(メニュー)で構成されている。

- 1 HOUR METER: アワーメーター(積算時間計)
- 2 TAPE: テープ再生データ
- 3 DIGITAL AUDIO INPUT: デジタルオーディオ入力信号
- 4 KEY/WARNING LOG: キー/ワーニング履歴
- 5 VERSION: バージョン (V2.00~)

各インフォメーションメニューへの入り方

[F1], [F2]で項目を選択し、[F1] [EXIT]キーを押す。

SERVICE INFORMATION

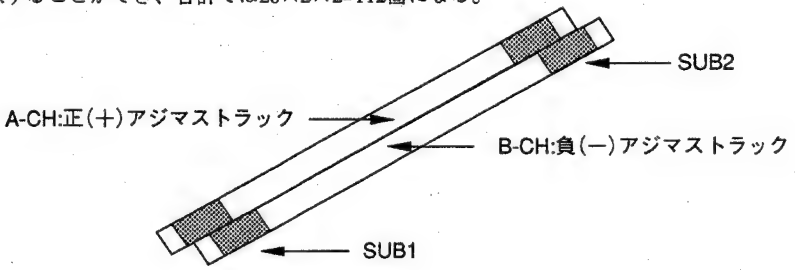
- [F1] HOUR METER
- 2 TAPE
- 3 DIGITAL AUDIO INPUT
- 4 KEY/WARNING LOG
- 5 VERSION

ENTER EXIT

F1 F2 F3 F4 F5 F6 F7

インフォメーションメニュー初期画面

メニュー項目	説明
1 HOUR METER (アワーメーター)	<p>以下の積算時間または回数を表示する。</p> <p>OPERATION METER : 電源通電時間</p> <p>DRUM RUNNING METER : プレーヤ/レコーダー各デッキのドラム回転時間</p> <p>TAPE RUNNING METER : プレーヤ/レコーダー各デッキの走行時間</p> <p>THREADING/UNTHREADING COUNTER : プレーヤ/レコーダー各デッキのスレッド/アンスレッド回数</p> <p>メニューの抜け方 [F2] [EXIT]キーを押す。</p>
2 TAPE (テープ再生データ)	<p>再生エラーレートおよび再生テープ情報を表示する。 再生テープ情報はグループ1, 2, 3に分かれており、[F1], [F2]キーで選択する。 選択されていないグループの表示データは更新されない。</p> <ul style="list-style-type: none"> • テープ走行モード • A-ch, B-chの平均エラーレート <p><u>グループ1</u></p> <ul style="list-style-type: none"> • メインID <ul style="list-style-type: none"> ADRS : フレームアドレス F-ID : フォーマットID ID1 : エンファシス ID2 : サンプリング周波数 ID3 : チャンネル数 ID4 : 量子化 ID5 : トラックピッチ ID6 : デジタルコピー ID7 : バック • サブID <ul style="list-style-type: none"> DATA ID : データID TOC : コントロールID内のTOC ID SKIP : コントロールID内のショートニングID START : コントロールID内のスタートID PRIORITY : コントロールID内のプライオリティID PGM No. : プログラム番号 PACK ID : バックID • タイムコード <ul style="list-style-type: none"> PRO R-TIME : プロRタイム(H:M:S:F) A-TIME : アブソリュートタイム(H:M:S:F) TC MARKER : プロRタイム内のタイムコードマーカ(10進数) TC FORMAT : プロRタイム内のタイムコードプラグ UBIT : プロバイナリー(ユーザービット)

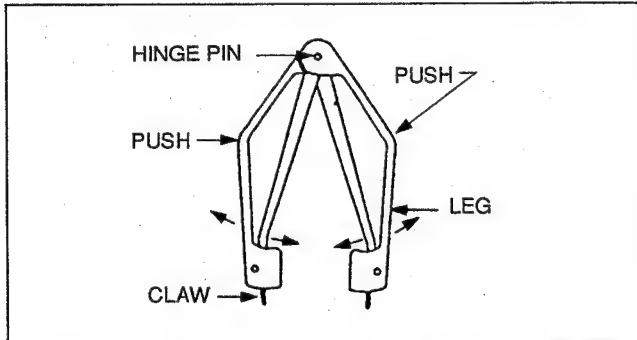
メニュー項目	説 明
	<p><u>グループ2</u></p> <ul style="list-style-type: none"> サブコード内バックIDとその記録位置: サブコードエリアに記録されているバックIDと記録位置を表示する。 DATフレーム(30msec)は2トラック(A-ch/B-ch)で構成され、各トラックにはSUB1とSUB2の2つのサブコードエリアがある。各エリアには28箇のバック(A-TIMEやPRO R-TIMEなど)を記録することができ、合計では28×2×2=112箇になる。  <p><u>グループ3</u></p> <ul style="list-style-type: none"> 絶対値変換した16bit再生オーディオ信号のビットマップメーター*)。 左端がビット0で、右端がオーバーを示す。(0000H~7FFFH, 80000H: OVER) <div style="text-align: center;"> <p>bit0 bit14 OVER</p> <p> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> </p> </div> <p>*) : ビットマップメーター 16ビットオーディオデータの各ビットを1つのメーターセグメントに対応させ、ビットが1のときに点灯させる表示方式。</p> <p>各操作キー</p> <ul style="list-style-type: none"> テープ走行キー : EJECT STOP PLAY FF REW SHUTTLE グループ切り換え : F1、F2 キー デッキ切り換え : F3 [DECK] キー <p>メニューの抜け方 F2 [EXIT] キーを押す。</p>
<p>3 DIGITAL AUDIO INPUT (デジタルオーディオ入力信号)</p>	<p>受信状態とチャンネルステータス情報を表示する。</p> <ul style="list-style-type: none"> PLL : PLL回路のLOCK/UNLOCK FREQUENCY : 入力信号周波数の偏差 LOCK : 約±1000ppm内 UNLOCK: 範囲外 チャンネルステータス <ul style="list-style-type: none"> (1) PRO/CONがプロのとき <ul style="list-style-type: none"> DATA : オーディオ/ノンオーディオ CHANNEL : チャンネルモード Fs ID : サンプリング周波数ID EMPHASIS ID : エンファシスID (2) PRO/CONがコンシューマのとき <ul style="list-style-type: none"> CATEGORY : カテゴリコード Fs ID : サンプリング周波数ID EMPHASIS ID : エンファシスID COPY ID : コピーID 絶対値変換した16bit再生オーディオ信号のビットマップメーター。 左端がビット0で、右端がオーバーを示す。(0000H~7FFFH, 80000H: OVER) <div style="text-align: center;"> <p>bit0 bit14 OVER</p> <p> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> </p> </div> <p>メニューの抜け方 F2 [EXIT] キーを押す。</p>

メニュー項目	説 明
<p>4 KEY/WARNING LOG (キー/ワーニング履歴)</p>	<p>押したキーと発生したワーニングエラーの履歴を表示する。ただし、このモードでのキー操作はメモリーしない。 メモリー数は、240ポイント(1~15ページ)</p> <ul style="list-style-type: none"> • NO. : 通し番号 • MODE : 動作モード • SUB MODE : サブモード • KEY/WARNING : キー名称、またはワーニング番号 • DATE, TIME : 月/日、時/分/秒 <p>[SHIFT]キーとの二重押しの場合、キー名称の脇に⑤が表示される。</p> <p>各操作キー</p> <ul style="list-style-type: none"> • ページ切り換え : [F6][↑], [F7][↓]キー • メモリーの消去 : [F4][CLEAR]キー <p>メニューの抜け方 [F2][EXIT]キーを押す。</p>
<p>5 VERSION (バージョン)</p>	<p>次のプレーヤー、レコーダー、インターフェイスROMの情報を表示する。</p> <ul style="list-style-type: none"> • バージョン履歴 • バージョン • チェックサム(8ビットタイプと16ビットタイプ) <p>メニューの抜け方 [F2][EXIT]キーを押す。</p>

1-4-3. Removal of PLCC IC

The Extraction Tool is useful for removing the IC (PLCC type) inserted into an IC socket. This is useful for all sizes of ICs 20 pins through 124 pins.

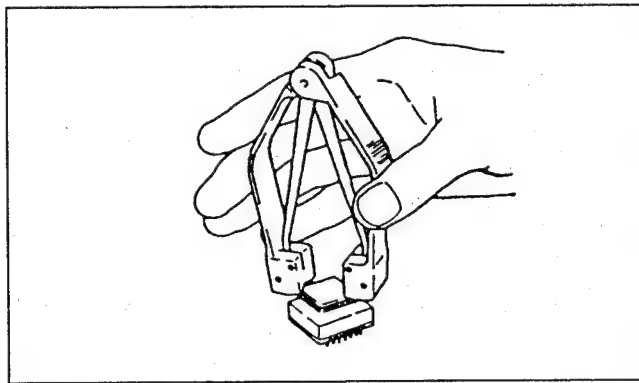
Extraction Tool (for PLCC socket)
Sony Part No. J-6035-070-A



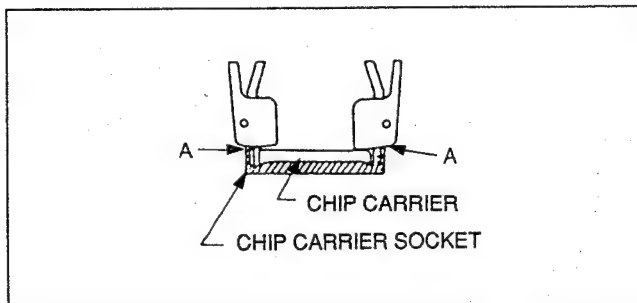
Note:

- Never pull chips of IC upward with the Extraction Tool.
- Never hold the Extraction Tool on a strong force.

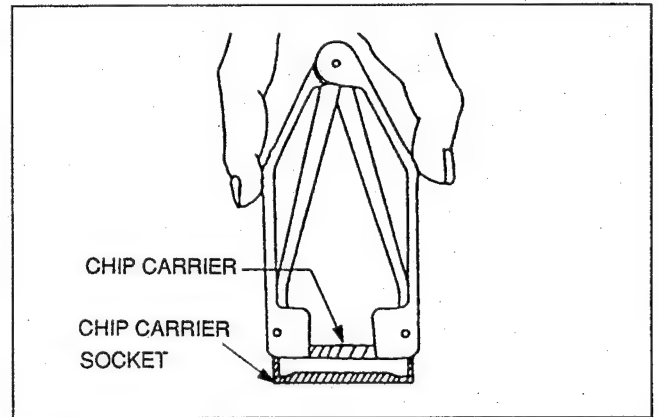
(1) Adjust which so that claws of the tool are matched to the socket of an IC.



(2) Insert the claws of the tool into the slots of the socket, and then press the tool against the socket so that the A portion shown in the figure contact to the socket.



(3) Hold the tool as shown in the figure. The socket is pressed on a little force to downward.



(4) Pinch the tool, so the legs of the tool are straightened. At that time, the claws pinch the chips of the IC and pull the IC upward.

(5) After pulling the IC, loosen the force of the fingers, and take off the chip.

1-5. SERVICE MENU

Service Menu Item List

Service Menu

- 1. PLAYER MECHANICAL DECK ADJUSTMENT
 - 1. SERVO DATA PRESET
 - 2. PLUNGER CHECK
 - 3. MECHANICAL DEVICE TEST
 - 4. RECOGNITION SWITCH CHECK
 - 5. END SENSOR LEVEL CHECK (HIGH)
 - 6. END SENSOR LEVEL CHECK (LOW)
 - 7. DEW SENSOR CHECK
 - 8. REEL TORQUE CHECK
 - 9. FWD/RVS TORQUE ADJUSTMENT
 - 10. DRUM/CAPSTAN SPEED & WOW CHECK
 - 11. TAPE PATH ADJUSTMENT
 - 12. SWP POSITION ADJUSTMENT
 - 13. PATH & FF/REW TIME CHECK
 - 14. PB ERROR RATE CHECK
 - 15. -----
 - 16. -----
 - 17. -----
 - 18. SERVO DATA SAVE
 - 19. SERVO DATA DISPLAY
- 2. RECORDER MECHANICAL DECK ADJUSTMENT
 - 1. SERVO DATA PRESET
 - 2. PLUNGER CHECK
 - 3. MECHANICAL DEVICE TEST
 - 4. RECOGNITION SWITCH CHECK
 - 5. END SENSOR LEVEL CHECK (HIGH)
 - 6. END SENSOR LEVEL CHECK (LOW)
 - 7. DEW SENSOR CHECK
 - 8. REEL TORQUE CHECK
 - 9. FWD/RVS TORQUE ADJUSTMENT
 - 10. DRUM/CAPSTAN SPEED & WOW CHECK
 - 11. TAPE PATH ADJUSTMENT
 - 12. SWP POSITION ADJUSTMENT
 - 13. PATH & FF/REW TIME CHECK
 - 14. PB ERROR RATE CHECK
 - 15. REC CURRENT ADJUSTMENT(LEADING)
 - 16. REC CURRENT ADJUSTMENT(TRAILING)
 - 17. REC/PB ERROR RATE CHECK
 - 18. SERVO DATA SAVE
 - 19. SERVO DATA DISPLAY
- 3. TEST
 - 1. KEY/DIAL
 - 2. EL/LED
 - 3. RS-232C
 - 4. SSP-8 SIGNAL PATH
- 4. INFORMATION
 - 1. HOUR METER
 - 2. TAPE
 - 3. DIGITAL AUDIO INPUT
 - 4. KEY/WARNING LOG
 - 5. VERSION(V2.00 and Higher)

The service menu consists of the following;

- "1. PLAYER MECHANICAL DECK ADJUSTMENT" menu
: This menu performs adjustment/tests of the player mechanical deck.
- "2. RECORDER MECHANICAL DECK ADJUSTMENT" menu
: This menu performs adjustment/test of the recorder mechanical deck.
- "3. TEST" menu
: This menu performs self-diagnosis.
- "4. INFORMATION" menu
: This menu indicates various information on the hour meters and the tape.

How to enter the service menu

- (1) Turn the power on, and press the **MODE** key while pressing the **SHIFT** key, and the menu (initial) will appear.
- (2) Press function keys (**F1** : [P-MD], **F2** : [R-MD], **F3** : [TEST], **F4** : [INFORM]) corresponding to each menu.

SERVICE MENU

1. PLAYER MECHANICAL DECK ADJUSTMENT
2. RECORDER MECHANICAL DECK ADJUSTMENT
3. TEST
4. INFORMATION

P-MD R-MD TEST INFORM

F1 F2 F3 F4 F5 F6 F7

Service Menu (initial)

How to exit from the service menu

- (1) Press the **F2** [EXIT] key to get access to the initial display from the adjustment/test/information menus.
- (2) To restore the normal mode, turn the power off and on again, and audio edit mode will be activated.

1-5-1. "1. PLAYER MECHANICAL DECK ADJUSTMENT" menu

This is described on the "SECTION 2 REPLACEMENT AND ADJUSTMENT OF MECHANISM DECK".

1-5-2. "2. RECORDER MECHANICAL DECK ADJUSTMENT" menu

This is described on the "SECTION 2 REPLACEMENT AND ADJUSTMENT OF MECHANISM DECK".

1-5-3. "3. TEST" menu

The test menu consists of the following;

- 1 KEY/DIAL : Key/dial (search dial, level/balance control) test
- 2 EL/DISPLAY : EL display/LED test
- 3 RS-232C : RS-232C loop back test
- 4 SSP-8 SIGNAL PATH : Audio signal path test for SSP-8 board

How to enter each test menu

Use **F1** and **F2** keys for selection, and press the **F1** [TEST ON] key.

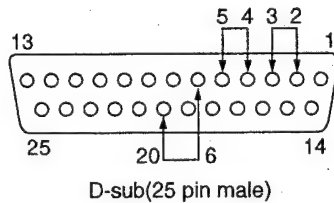
SERVICE TEST

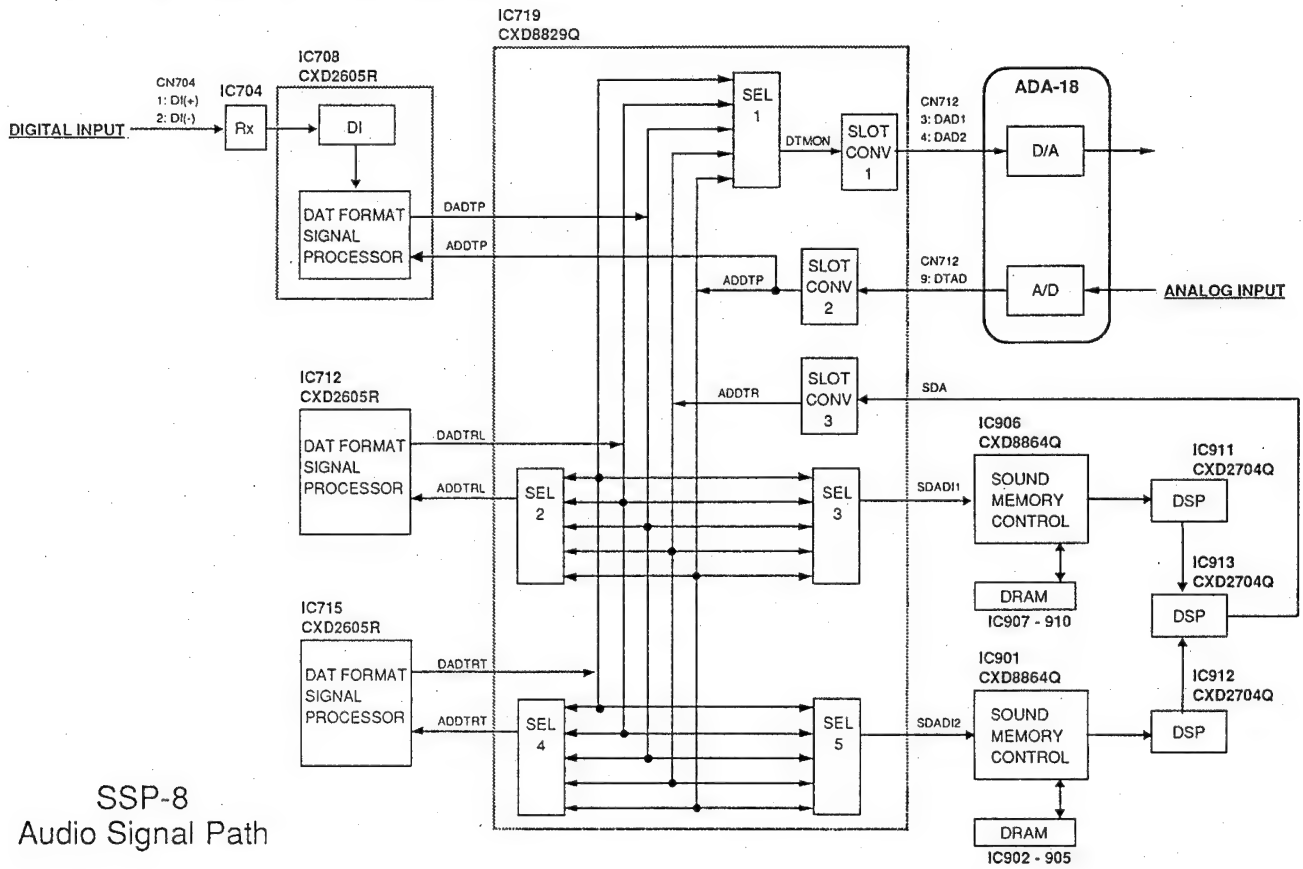
- 1 KEY/DIAL
- 2 EL/DISPLAY
- 3 RS-232C
- 4 SSP-8 SIGNAL PATH

TEST ON EXIT

F1 F2 F3 F4 F5 F6 F7

Test Menu (initial)

Menu	Description
1 KEY/DIAL (Key/dial test)	<ul style="list-style-type: none">• Key test(41 places) : The key indication on the EL display flashes while the key is pressed, and it is cross-hatched when the key is released.• Dial test : Values are increased/decreased according to the turning direction(JOG dial or LEVEL/BALANCE control). <p>How to exit Press the [F1] [TEST OFF] key while pressing the [SHIFT] key.</p>
2 EL/DISPLAY (EL display/LED test)	<ul style="list-style-type: none">• EL display : All EL display indications come on → patterned → All EL display indications go off.• LED (21places) : All LEDs come on. <p>How to exit Press the [F1] [TEST OFF] key</p>
3 RS-232C (RS-232C loop back test)	<p>Data transferring/receiving and control signal inputting/ outputting of the RS-232C are chekced.</p> <p>Procedure</p> <p>(1) Prepare a 25-pin D-sub connector (male) of which pins are connected as follows: pin 2 (TXD) ——— pin3 (RXD) pin 4 (RTS) ——— pin 5 (CTS) pin 6 (DSR) ——— pin 20 (DTR) Then insert it into the RS-232C connector on the rear panel (PCM-E7700).</p> <p>(2) Press the [F3] [START] key. Then the test will start and the results will be displayed. In case of an error (FAULT), the following on the SSP-8 board can be considered defective:</p> <ul style="list-style-type: none">• IC116(UPD71101); SCU(Serial Control Unit)• IC121(LT1134); RS-232C Driver/Receiver• Disconnection of CN102 or harnesses <p>How to exit Press the [F1] [TEST OFF] key.</p> <div><p>-WIRING SIDE-</p><p>D-sub(25 pin male)</p></div>
4 SSP-8 SIGNAL PATH (Audio signal pathsignal path test for SSP-8 board)	<p>Input different audio signals into the analog/digital input connector and check whether or not audio output is available when the audio signal path on the SSP-8 board is changed over.</p> <p>Procedure</p> <p>(1) Input different audio signals to the analog/digital input connector.</p> <p>(2) Use [A] and [D] keys to change over the signal path, and check that analog or digital input audio signal displayed will be output.</p> <p>Note</p> <ol style="list-style-type: none">1. As for PATH-10 and PATH-11, audio signal is not output because they are for inspection at shipment from the factory.2. As for PATH-12, 1 kHz signal is output from the internal DSP irrespective of the type of the input audio. <p>How to exit Press the [F1] [TEST OFF] key.</p>



SSP-8

Audio Signal Path

Audio signal path No. and ICs (SSP-8 board)

PATH NO.	A/D ANALOG	IC704 AM26LS32 DIGITAL	IC708 CXD2605	IC712 CXD2605	IC715 CXD2605	IC719 CXD8829								IC806 CXD8864	IC907- 810 DRAM	IC911 CXD2704	IC901 CXD8864	IC902- 905 DRAM	IC912 CXD2704	IC913 CXD2704	D/A
						SEL 1	SEL 2	SEL 3	SEL 4	SEL 5	CONV 1	CONV 2	CONV 3								
PATH-1	<input type="radio"/>					<input type="radio"/>					<input type="radio"/>	<input type="radio"/>							<input type="radio"/>		
PATH-2		<input type="radio"/>	<input type="radio"/>			<input type="radio"/>					<input type="radio"/>								<input type="radio"/>		
PATH-3		<input type="radio"/>	<input type="radio"/>			<input type="radio"/>		<input type="radio"/>			<input type="radio"/>		<input type="radio"/>		<input type="radio"/>			<input type="radio"/>	<input type="radio"/>		
PATH-4		<input type="radio"/>	<input type="radio"/>			<input type="radio"/>		<input type="radio"/>			<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>		
PATH-5	<input type="radio"/>		<input type="radio"/>			<input type="radio"/>					<input type="radio"/>	<input type="radio"/>							<input type="radio"/>		
PATH-6	<input type="radio"/>		<input type="radio"/>							<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>		<input type="radio"/>	<input type="radio"/>		
PATH-7	<input type="radio"/>		<input type="radio"/>			<input type="radio"/>				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
PATH-8	<input type="radio"/>			<input type="radio"/>		<input type="radio"/>	<input type="radio"/>				<input type="radio"/>	<input type="radio"/>							<input type="radio"/>		
PATH-9	<input type="radio"/>				<input type="radio"/>	<input type="radio"/>			<input type="radio"/>		<input type="radio"/>	<input type="radio"/>							<input type="radio"/>		
PATH-10	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				<input type="radio"/>	<input type="radio"/>							<input type="radio"/>		
PATH-11	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>				<input type="radio"/>	<input type="radio"/>							<input type="radio"/>		
PATH-12						<input type="radio"/>					<input type="radio"/>		<input type="radio"/>					<input type="radio"/>	<input type="radio"/>		

1-5-4."4. INFORMATION" menu

The information menu consists of the following;

- 1 HOUR METER : Hour meter (integrating hour meter)
- 2 TAPE : Off tape data
- 3 DIGITAL AUDIO INPUT : Digital audio input signal
- 4 KEY/WARNING LOG : Key/warning log
- 5 VERSION : Version (V2.00 and Higher)

How to enter each information menu

Use **[↑]** and **[↓]** keys for selection, and press the **[F1]** [ENTER] key.

SERVICE INFORMATION	
[1]	HOUR METER
2	TAPE
3	DIGITAL AUDIO INPUT
4	KEY/WARNING LOG
5	VERSION
ENTER EXIT	
F1	F2 F3 F4 F5 F6 F7

Information Menu (initial)

Menu	Description
1 HOUR METER (Hour meter)	<p>The types of the hour meters are as follows: OPERATION METER : shows power-on time.</p> <p>The following three meters are assembled into each deck of the players and the recorders: DRUM RUNNING METER : shows drum rotation time. TAPE RUNNING METER : shows tape running time. THREADING/UNTHREADING COUNTER : shows No.of threading/unthreading.</p> <p>How to exit Press the [F2] [EXIT] key.</p>
2 TAPE (Off tape data)	<p>In this menu, playback error rate and playback tape information are described. Playback tape information consists of three groups (1,2,and3), and use [↑] and [↓] keys for selection.</p> <ul style="list-style-type: none"> • Tape running mode • Average error rate of A-ch and B-ch <p><u>Group1</u></p> <ul style="list-style-type: none"> • Main ID <ul style="list-style-type: none"> ADRS : Frame Address F-ID : Format ID ID1 : Emphasis ID2 : Sampling Frequency ID3 : No. of Channels ID4 : Quantization ID5 : Track Pitch ID6 : Digital Copy ID7 : Pack • Sub ID <ul style="list-style-type: none"> DATA ID : Data ID TOC : TOC ID in control ID SKIP : Shortening ID in control ID START : Start ID in control ID PRIORITY : Priority ID in control ID PGM No. : Program No. PACK ID : Pack ID • Time code <ul style="list-style-type: none"> PRO R-TIME : Pro R time (H:M:S:F) A-TIME : Absolute time (H:M:S:F) TC MARKER : Time code marker in pro R time (decimal number) TC FORMAT : Time code flag in pro R time UBIT : Pro binary (user bit)

Menu	Description
4 KEY/WARNING LOG (Key/warning log)	<p>Log of keys pressed and warning errors are indicated. In this mode, however, key operation is not memorized.</p> <p>The capacity of the memory is 240 points (1 to 15 pages).</p> <ul style="list-style-type: none"> • NO. : Serial No. • MODE : Operation mode • SUB MODE : Sub mode • KEY/WARNING : Key name or warning No. • DATE, TIME : Month/date, hour/minute/second <p>When the [SHIFT] key is pressed at the same time, S appears by the key name.</p> <p>Operation key</p> <ul style="list-style-type: none"> • Page switch : [F6] [↑], [F7] [↓] key • Memory clear : [F4] [CLEAR] key <p>How to exit Press the [F2] [EXIT] key.</p>
5 VERSION	<p>Version of PLAYER, RECORDER and INTERFACE ROM are indicated.</p> <ul style="list-style-type: none"> • Version History • Version • Checsum (8 bit type and 16 bit type) <p>How to exit Press the [F2] [EXIT] key.</p>

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 3.5mA. Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 5.25V so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 20V AC range are suitable. (See Fig. A)

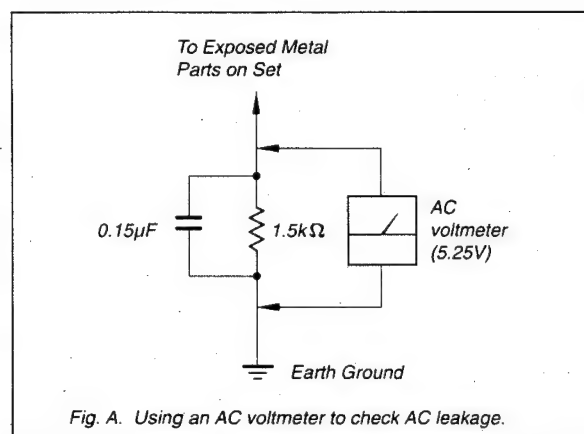


Fig. A. Using an AC voltmeter to check AC leakage.

CAUTION

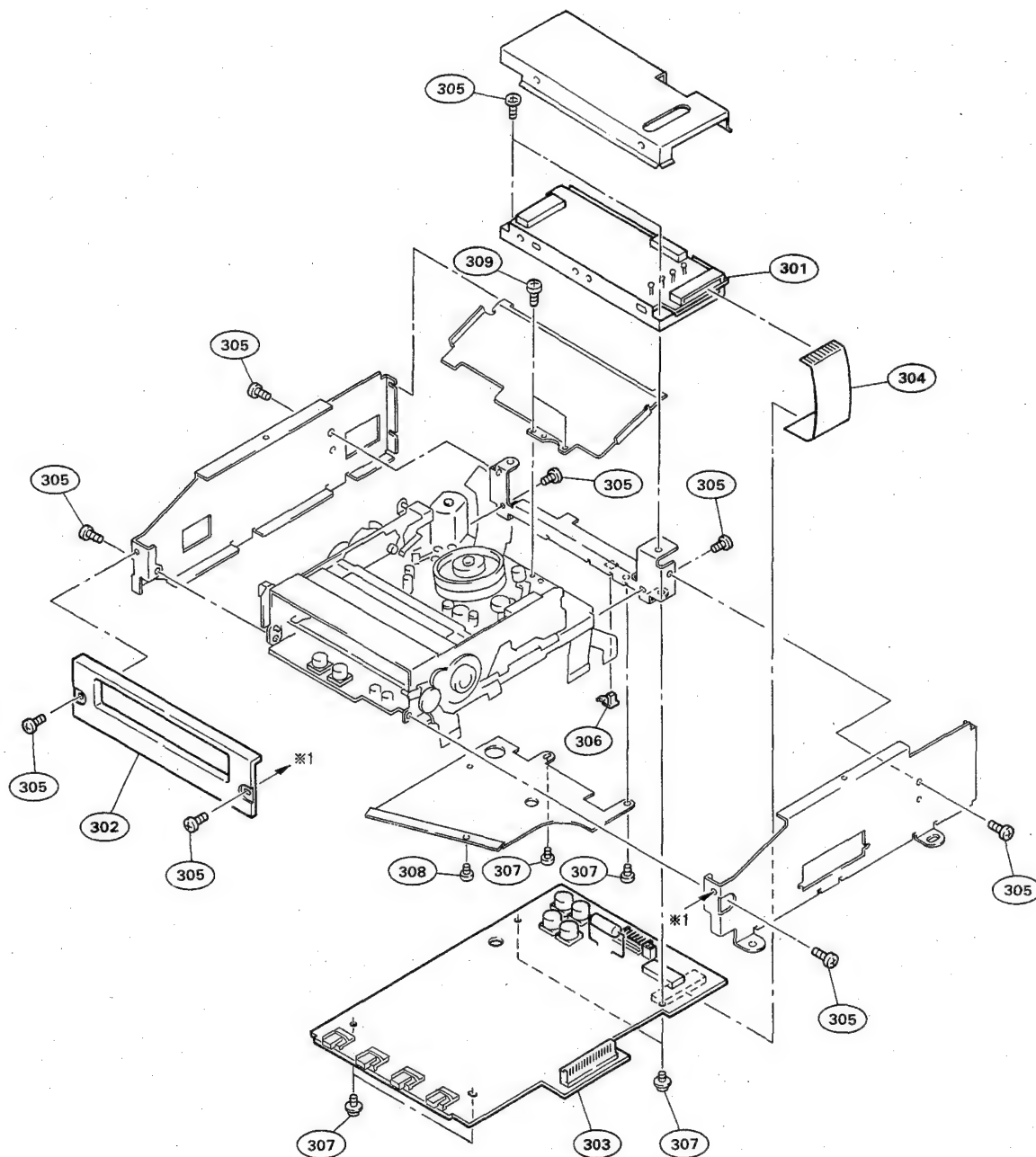
Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

SECTION 4 BOARD LAYOUTS

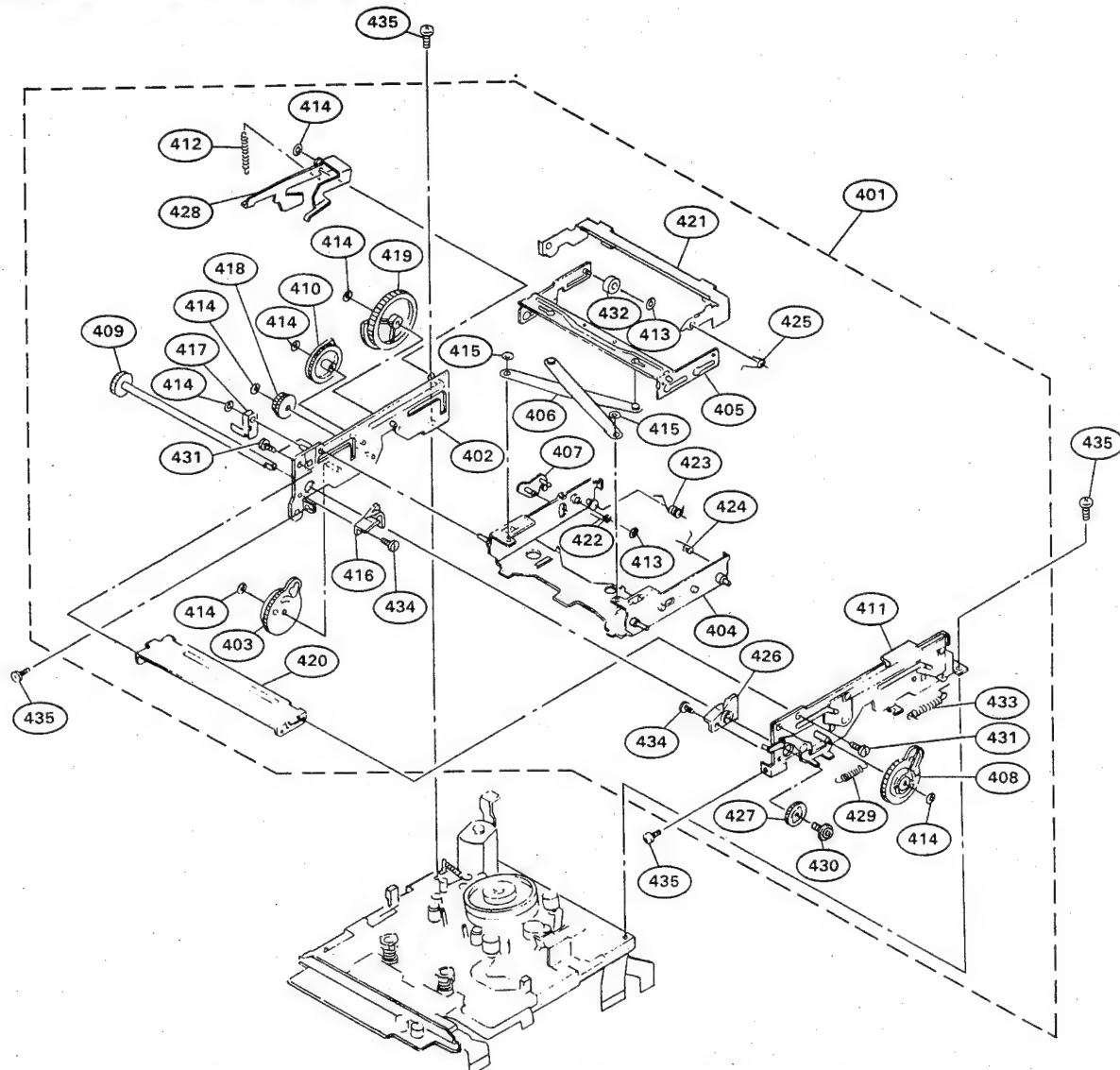
Board	Function	Page
A ADA-31	Rec Audio,A/D Converter:PB Audio,D/A Converter	4-3
C CP-233	Connector(ANALOG IN,DIGITAL IN).....	4-7
CP-234	Connector(MONITOR OUT).....	4-7
H HP-57	Headphones	4-8
K KY-247	Eject Key	4-8
L LED-160	Power Indicator	4-8
R RF-53	RF Amplifier	4-7
S SSP-8	System Control,Signal Processor	4-4
SV-147	Servo	4-6
V VR-154	Rotary Encoder(BALANCE).....	4-8
VR-181	Rotary Encoder(LEVEL).....	4-8
 OTHERS		
CAPSTAN FLEXIBLE		4-6
GOMA		4-6
RECOGNI END FLEXIBLE		4-6
REEL FG		4-6
REEL FG.DEW FLEXIBLE		4-6
TENREGI		4-6
TENREGI MOTOR ENCODER FLEXIBLE		4-6

MECHANICAL DECK (PLAYER AND RECORDER) ASSY CASE SECTION



No.	Part No.	SP Description
301	A-8310-132-A	o RF-53 ASSY(RP)
302	A-8267-753-B	o WINDOW ASSY, CASSETTE
303	A-8310-133-A	o MOUNTED CIRCUIT BOARD, SV-147
304	1-764-402-11	s WIRE, FLEXIBLE CARD(1.00MM)18P
305	3-374-615-11	s SCREW(M2), BIND
306	3-671-150-11	o CLAMP
307	3-703-502-21	s SCREW
308	7-627-850-08	s SCREW,PRECISION +P 1.4X2
309	7-627-850-47	s SCREW,PRECISION +P 1.4X1.6

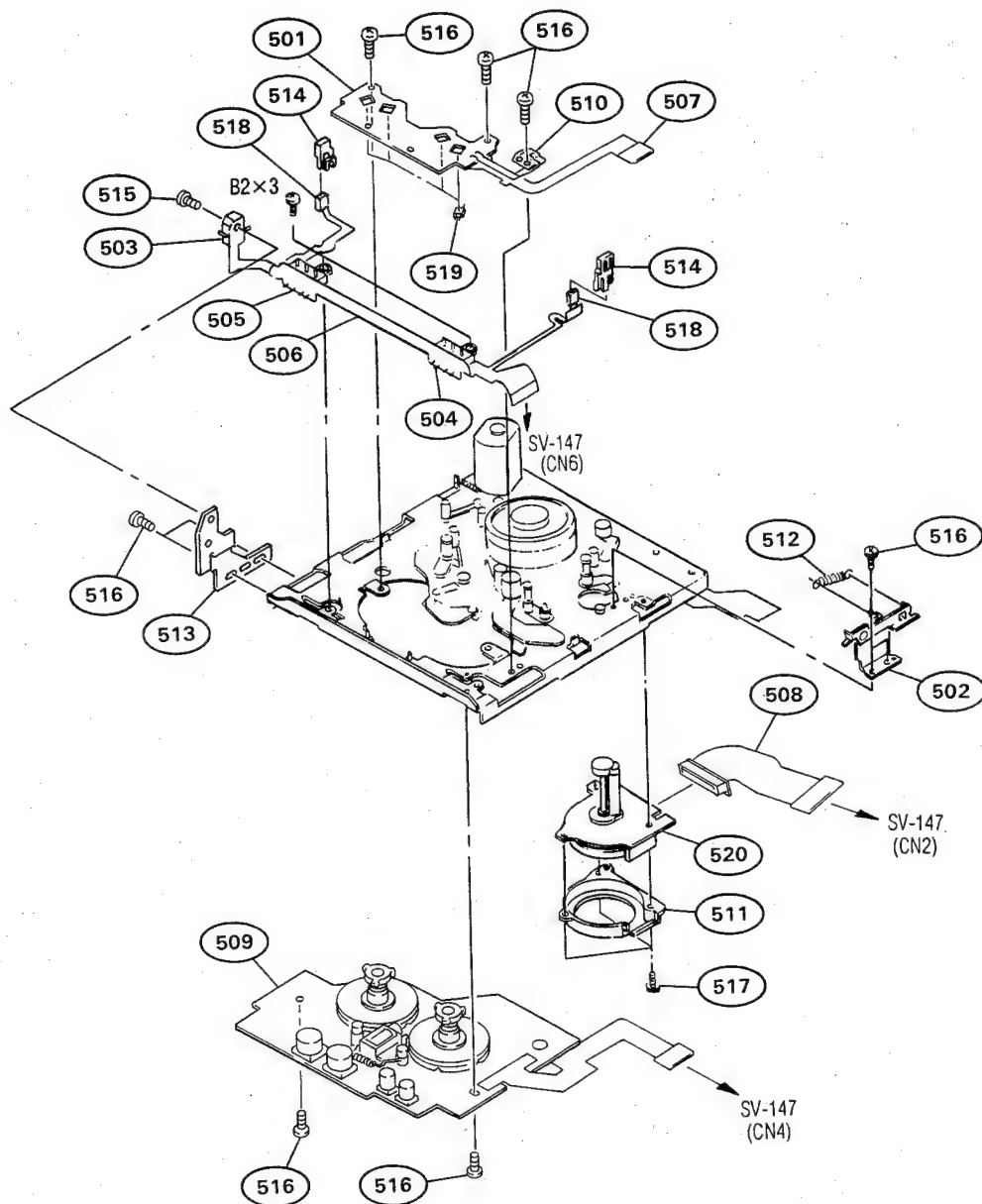
CASSETTE COMPARTMENT SECTION



No.	Part No.	SP Description
401	A-8267-998-B	s CASSETTE COMPARTMENT ASSY
402	X-3363-985-5	s PLATE (LEFT) ASSY, SIDE
403	X-3363-986-2	s GEAR (LEVER LEFT) ASSY
404	X-3363-987-7	s HOLDER ASSY, CASSETTE
405	X-3363-989-2	s SLIDER (CASSETTE) ASSY
406	X-3363-990-1	s LEVER ASSY, X
407	X-3363-991-3	s LEVER ASSY, SLIDER LOCK
408	X-3363-995-2	s GEAR (LEVER RIGHT) ASSY
409	X-3363-996-1	s GEAR (JOINT) ASSY
410	X-3366-603-1	s GEAR (C3) ASSY
411	X-3367-014-1	s PLATE (RIGHT) ASSY, SIDE
412	3-140-263-99	s SPRING, TENSION
413	3-321-393-01	s WASHER, STOPPER
414	3-341-752-11	s WASHER, POLYETHYLENE
415	3-341-753-11	s WASHER, POLYETHYLENE
416	3-374-680-01	s GUIDE (CASSETTE LEFT)
417	3-374-681-01	s LEVER (SWITCH)
418	3-374-686-01	s GEAR
419	3-374-688-01	s GEAR (C2)
420	3-374-689-01	s PLATE, JOINT

No.	Part No.	SP Description
421	3-374-713-01	s LEVER (CASSETTE)
422	3-374-720-01	s SPRING (SLIDER LOCK), TORSION
423	3-374-721-02	s SPRING (SLIDER RETURN), TORSION
424	3-374-722-01	s SPRING (LID ARM), TORSION
425	3-374-723-01	s SPRING (CASSETTE LEVER), TORSION
426	3-374-734-01	s GUIDE (CASSETTE RIGHT)
427	3-374-739-01	s GEAR (JOINT RIGHT)
428	3-388-228-02	s LEVER (LID UP)
429	3-561-628-00	s SPRING, TENSION
430	3-703-502-11	s SCREW
431	3-703-816-31	s SCREW (M1.4X1.6), SPECIAL HEAD
432	3-904-008-01	s ROLLER
433	4-858-478-00	s SPRING, TENSION
434	7-627-850-27	s SCREW, PRECISION +P 1.4X3
435	7-627-850-47	s SCREW, PRECISION +P 1.4X1.6

MECHANISM DECK SECTION (1)



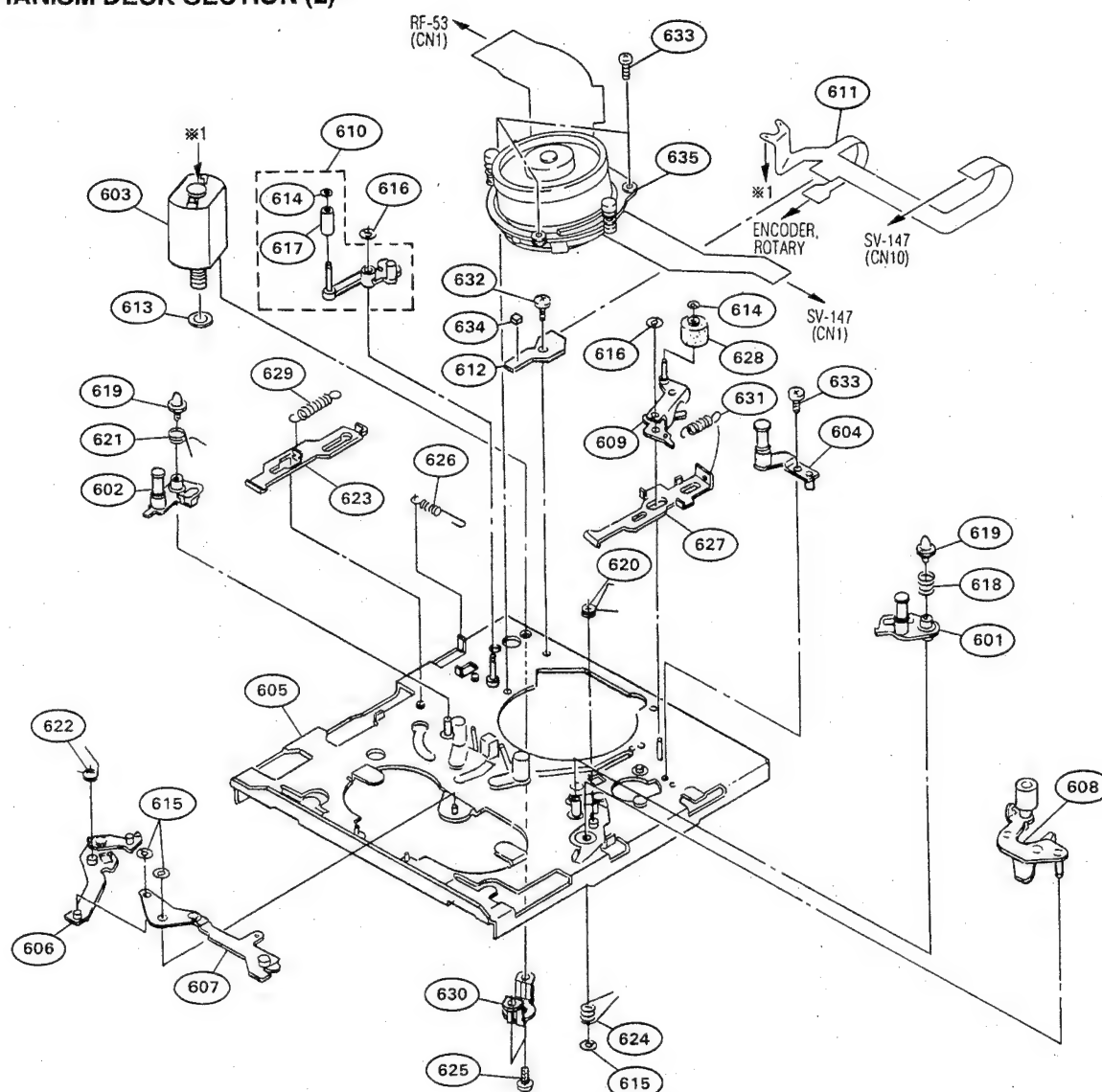
No. Part No. SP Description

501	A-8276-769-A	o MOUNTED CIRCUIT BOARD, REEL FG
502	X-3363-984-1	s ARM ASSY, LID
503	1-570-771-11	s SWITCH
504	1-572-950-11	s SWITCH, PUSH
505	1-572-951-11	s SWITCH, PUSH
506	1-642-056-12	s PRINTED CIRCUIT BOARD, RECOGNI END FLEXIBLE
507	1-648-978-11	s PRINTED CIRCUIT BOARD, REEL FG.DEW FLEXIBLE
508	1-648-979-11	s PRINTED CIRCUIT BOARD, CAPSTAN FLEXIBLE
509	1-698-227-11	s MOTOR, REEL
510	1-809-544-12	s SENSOR, DEW CONDENSATION

No. Part No. SP Description

511	3-374-654-01	s COVER (MOTOR)
512	3-374-672-01	s SPRING, TENSION
513	3-374-673-01	s BRACKET (SWITCH)
514	3-374-674-01	s HOLDER (ES)
515	7-627-553-67	s SCREW,PRECISION +P 2X5
516	7-627-850-08	s SCREW,PRECISION +P 1.4X2
517	7-627-850-27	s SCREW,PRECISION +P 1.4X3
518	8-729-907-25	s PHOTO TRANSISTOR PT4850F
519	8-759-057-48	s PHOTO REFLECTOR NJL5803K-F10
520	8-835-329-12	s MOTOR, DC U-21A

MECHANISM DECK SECTION (2)



No. Part No. SP Description

601 A-8267-743-A s ROLLER ASSY, RG
 602 A-8267-744-A s ROLLER ASSY, LG
 603 A-8267-759-A s MOTOR ASSY, DRIVE
 604 A-8267-761-A s GUIDE ASSY, ROLLER
 605 X-3363-963-1 o CHASSIS ASSY

606 X-3363-965-1 s LEVER ASSY, CAM
 607 X-3363-966-1 s LEVER ASSY, LR
 608 X-3363-976-1 s PINCH ROLLER ASSY
 609 X-3363-983-1 s ARM ASSY, CR
 610 X-3366-602-1 s TENSION REGULATOR ASSY

611 1-648-976-12 s PRINTED CIRCUIT BOARD,
 TENREGI METER ENCODER FLEXIBLE
 612 1-648-982-11 o PRINTED CIRCUIT BOARD, TENREGI
 613 3-320-354-21 s WASHER
 614 3-321-393-01 s WASHER, STOPPER
 615 3-341-752-11 s WASHER, POLYETHYLENE

616 3-341-753-11 s WASHER, POLYETHYLENE
 617 3-360-866-01 s ROLLER (TENSION REGULATOR)
 618 3-374-604-01 s SPRING, COMPRESSION
 619 3-374-605-01 s SHAFT (CASSETTE)
 620 3-374-606-01 s SPRING (R), TORSION

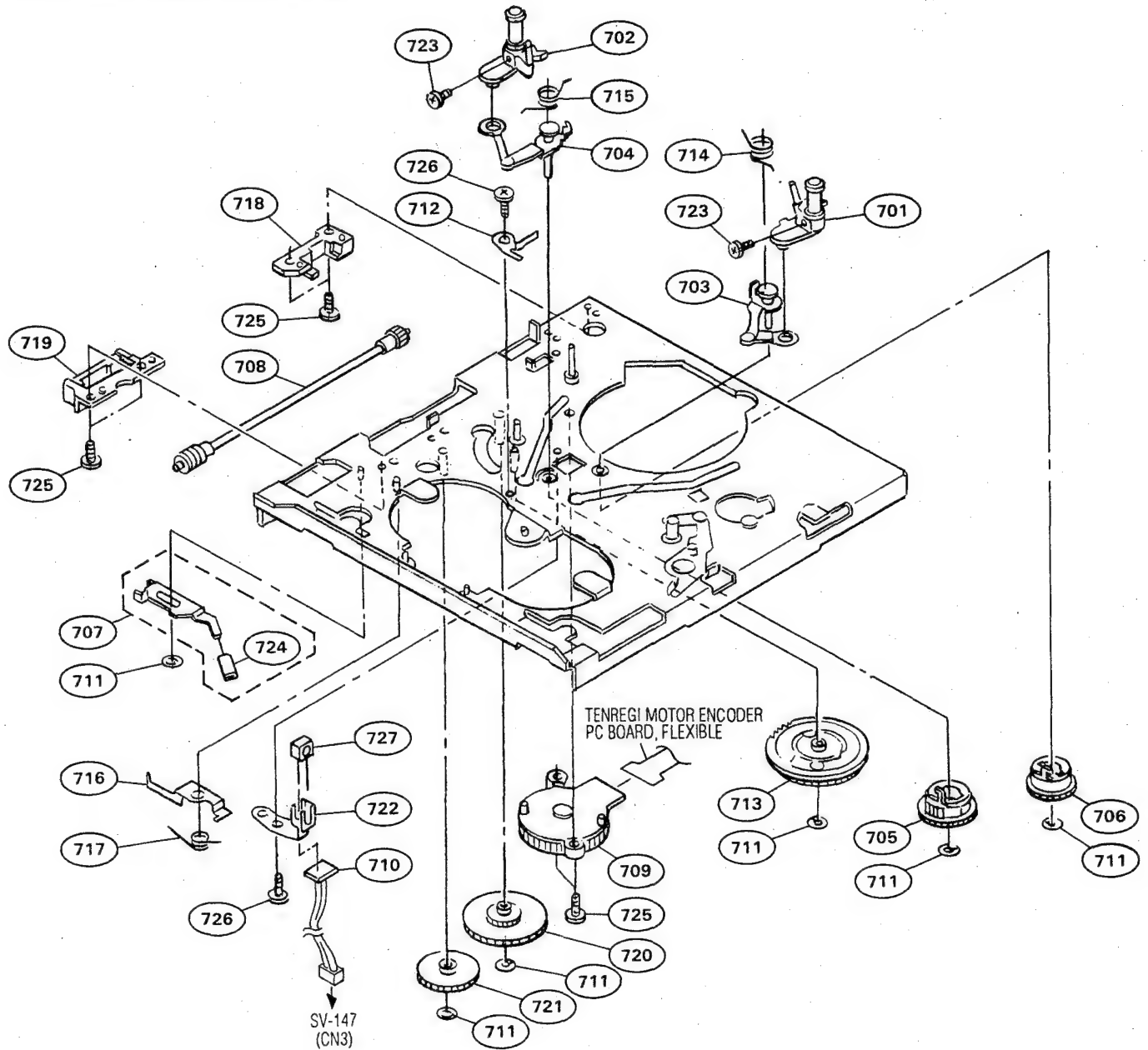
No. Part No. SP Description

621 3-374-608-01 s SPRING (LF), TORSION
 622 3-374-609-03 s SPRING (L), TORSION
 623 3-374-610-02 s SLIDER
 624 3-374-635-01 s SPRING (P), TORSION
 625 3-374-657-01 s SCREW (M2X2)

626 3-374-662-01 s SPRING, TENSION
 627 3-374-665-01 s SLIDER, CR
 628 3-375-727-01 s ROLLER (HC)
 629 3-375-728-01 s SPRING, TENSION
 630 3-379-832-01 s RETAINER, THRUST

631 3-570-776-01 s SPRING, TENSION
 632 7-627-850-08 s SCREW, PRECISION +P 1.4X2
 633 7-627-850-27 s SCREW, PRECISION +P 1.4X3
 634 8-719-821-03 s ELEMENT, HALL THS117
 635 8-848-611-11 s DRUM ASSY DOU-21A-R
 (For MT-PCM-E7700 P-103, PLAYER)
 8-848-612-11 s DRUM ASSY DOU-22A-R
 (For MT-PCM-E7700 R-103, RECORDER)

MECHANISM DECK SECTION (3)



No.	Part No.	SP Description
701	X-3363-969-1	s ROLLER ASSY, SLANT GUIDE (T)
702	X-3363-972-3	s ROLLER ASSY, SLANT GUIDE (S)
703	X-3363-974-1	s ARM (T) ASSY, LOADING
704	X-3363-975-1	s ARM (S) ASSY, LOADING
705	X-3363-978-1	s GEAR (S) ASSY, LOADING
706	X-3363-979-3	s GEAR (T) ASSY, LOADING
707	X-3363-980-1	s PLATE ASSY, SPOOL, REEL
708	X-3363-981-1	s GEAR ASSY, DRIVE
709	1-466-670-21	s ENCODER, ROTARY
710	1-642-088-11	o PRINTED CIRCUIT BOARD, GOMA
711	3-341-753-11	s WASHER, POLYETHYLENE
712	3-374-628-02	s PLATE, LOAD, PRE
713	3-374-636-01	s GEAR, CAM
714	3-374-641-01	s SPRING (T), TORSION
715	3-374-642-02	s SPRING (S), TORSION

No.	Part No.	SP Description
716	3-374-645-01	o RETAINER, SPOOL PLATE
717	3-374-646-01	s SPRING (SPOOL PLATE), TORSION
718	3-374-647-01	s RETAINER (A), DRIVE SHAFT
719	3-374-648-01	s RETAINER (B), DRIVE SHAFT
720	3-374-652-01	s GEAR (M2)
721	3-374-653-01	s GEAR (MD WHEEL)
722	3-374-655-01	s BRACKET (LED)
723	3-704-246-31	s SCREW (P1.4X2.5)
724	4-866-397-00	o CUSHION, LED
725	7-627-850-27	s SCREW,PRECISION +P 1.4X3
726	7-627-850-47	s SCREW,PRECISION +P 1.4X1.6
727	8-719-988-42	s DIODE GL453S

7-3. ELECTRICAL PARTS LIST

Replacements for capacitors and resistors not given in each board parts lists are shown below.
If a capacitor with the desired working voltage is not found, choose one of higher working voltage.

CAPACITOR, CHIP CERAMIC

Part No. SP Description

1-163-019-00	s CAP, CHIP CERAMIC	6800pF	10%	50V
1-163-038-00	s CAP, CHIP CERAMIC	0.1		25V
1-163-125-00	s CAP, CHIP CERAMIC	220pF	5%	50V
1-163-127-00	s CAP, CHIP CERAMIC	270pF	5%	50V
1-163-131-00	s CAP, CHIP CERAMIC	390pF	5%	50V
1-163-133-00	s CAP, CHIP CERAMIC	470pF	5%	50V
1-163-227-11	s CAP, CHIP CERAMIC	10pF	5%	50V
1-163-229-11	s CAP, CHIP CERAMIC	12pF	5%	50V
1-163-235-11	s CAP, CHIP CERAMIC	22pF	5%	50V
1-163-239-11	s CAP, CHIP CERAMIC	33pF	5%	50V
1-163-243-11	s CAP, CHIP CERAMIC	47pF	5%	50V
1-163-251-11	s CAP, CHIP CERAMIC	100pF	5%	50V
1-163-257-11	s CAP, CHIP CERAMIC	180pF	5%	50V
1-163-275-11	s CAP, CHIP CERAMIC	0.001	5%	50V
1-163-833-00	s CAP, CHIP CERAMIC	0.068		25V

CAPACITOR, CHIP TANTALUM

Part No. SP Description

1-135-073-00	s CAP, CHIP TANTALUM	0.33	10%	35V
1-135-208-11	s CAP, CHIP TANTALUM	1	20%	10V
1-135-217-21	s CAP, CHIP TANTALUM	15	20%	6.3V
1-135-227-11	s CAP, CHIP TANTALUM	100	20%	6.3V
1-135-259-11	s CAP, CHIP TANTALUM	10	20%	6.3V

RESISTOR, CHIP

Part No. SP Description

1-216-001-00	s RES, CHIP	10	5%	1/10W
1-216-009-00	s RES, CHIP	22	5%	1/10W
1-216-017-00	s RES, CHIP	47	5%	1/10W
1-216-021-00	s RES, CHIP	68	5%	1/10W
1-216-025-00	s RES, CHIP	100	5%	1/10W
1-216-029-00	s RES, CHIP	150	5%	1/10W
1-216-033-00	s RES, CHIP	220	5%	1/10W
1-216-035-00	s RES, CHIP	270	5%	1/10W
1-216-037-00	s RES, CHIP	330	5%	1/10W
1-216-039-00	s RES, CHIP	390	5%	1/10W
1-216-041-00	s RES, CHIP	470	5%	1/10W
1-216-049-00	s RES, CHIP	1K	5%	1/10W
1-216-051-00	s RES, CHIP	1.2K	5%	1/10W
1-216-055-00	s RES, CHIP	1.8K	5%	1/10W
1-216-057-00	s RES, CHIP	2.2K	5%	1/10W
1-216-063-00	s RES, CHIP	3.9K	5%	1/10W
1-216-065-00	s RES, CHIP	4.7K	5%	1/10W
1-216-071-00	s RES, CHIP	8.2K	5%	1/10W
1-216-073-00	s RES, CHIP	10K	5%	1/10W
1-216-075-00	s RES, CHIP	12K	5%	1/10W
1-216-077-00	s RES, CHIP	15K	5%	1/10W
1-216-079-00	s RES, CHIP	18K	5%	1/10W
1-216-081-00	s RES, CHIP	22K	5%	1/10W
1-216-083-00	s RES, CHIP	27K	5%	1/10W
1-216-085-00	s RES, CHIP	33K	5%	1/10W
1-216-089-91	s RES, CHIP	47K	5%	1/10W
1-216-095-00	s RES, CHIP	82K	5%	1/10W
1-216-097-00	s RES, CHIP	100K	5%	1/10W
1-216-103-91	s RES, CHIP	180K	5%	1/10W
1-216-107-00	s RES, CHIP	270K	5%	1/10W
1-216-113-00	s RES, CHIP	470K	5%	1/10W
1-216-121-00	s RES, CHIP	1.0M	5%	1/10W
1-216-295-00	s RES, CHIP	0	5%	1/10W
1-216-308-00	s RES, CHIP	4.7	5%	1/10W

ADA-31 BOARD

Ref. No.

or Q'ty Part No. SP Description

1pc A-8275-317-A o MOUNTED CIRCUIT BOARD, ADA-31
(This assembly includes the following parts.)

C1	1-124-589-11	s ELECT 47uF 20% 16V
C13	1-124-261-00	s ELECT 10uF 20% 50V
C14	1-124-261-00	s ELECT 10uF 20% 50V
C20	1-126-157-11	s ELECT 10uF 20% 16V
C21	1-126-157-11	s ELECT 10uF 20% 16V
C24	1-126-157-11	s ELECT 10uF 20% 16V
C25	1-124-234-00	s ELECT 22uF 20% 16V
#C101	1-163-275-11	s CERAMIC, CHIP 0.001uF 5% 50V
C102	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
C103	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
#C104	1-163-251-11	s CERAMIC, CHIP 100pF 5% 50V
#C105	1-163-275-11	s CERAMIC, CHIP 0.001uF 5% 50V
#C107	1-163-239-11	s CERAMIC, CHIP 33pF 5% 50V
C118	1-126-096-11	s ELECT 10uF 20% 35V
C121	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
C123	1-126-163-11	s ELECT 4.7uF 20% 50V
C124	1-164-232-11	s CERAMIC, CHIP 0.01uF 10% 100V
C125	1-164-232-11	s CERAMIC, CHIP 0.01uF 10% 100V
#C201	1-163-275-11	s CERAMIC, CHIP 0.001uF 5% 50V
C202	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
C203	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
#C204	1-163-251-11	s CERAMIC, CHIP 100pF 5% 50V
#C205	1-163-275-11	s CERAMIC, CHIP 0.001uF 5% 50V
#C207	1-163-239-11	s CERAMIC, CHIP 33pF 5% 50V
C218	1-126-096-11	s ELECT 10uF 20% 35V
C221	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
C223	1-126-163-11	s ELECT 4.7uF 20% 50V
C224	1-164-232-11	s CERAMIC, CHIP 0.01uF 10% 100V
C225	1-164-232-11	s CERAMIC, CHIP 0.01uF 10% 100V
C309	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
C310	1-164-232-11	s CERAMIC, CHIP 0.01uF 10% 100V
#C312	1-163-275-11	s CERAMIC, CHIP 0.001uF 5% 50V
C409	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
C410	1-164-232-11	s CERAMIC, CHIP 0.01uF 10% 100V
#C412	1-163-275-11	s CERAMIC, CHIP 0.001uF 5% 50V
C501	1-126-096-11	s ELECT 10uF 20% 35V
C503	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
C504	1-124-282-00	s ELECT, NONPOLAR 22uF 20% 25V
C505	1-126-096-11	s ELECT 10uF 20% 35V
C507	1-126-163-11	s ELECT 4.7uF 20% 50V
C508	1-164-232-11	s CERAMIC, CHIP 0.01uF 10% 100V
C510	1-126-096-11	s ELECT 10uF 20% 35V
C511	1-164-232-11	s CERAMIC, CHIP 0.01uF 10% 100V
C514	1-124-261-00	s ELECT 10uF 20% 50V
#C515	1-124-261-00	s ELECT 10uF 20% 50V
C517	1-124-261-00	s ELECT 10uF 20% 50V
C519	1-124-261-00	s ELECT 10uF 20% 50V
C521	1-126-096-11	s ELECT 10uF 20% 35V
C522	1-164-489-11	s CERAMIC, CHIP 0.22uF 10% 16V
C523	1-164-232-11	s CERAMIC, CHIP 0.01uF 10% 100V
C524	1-126-157-11	s ELECT 10uF 20% 16V
C602	1-126-096-11	s ELECT 10uF 20% 35V
C603	1-126-096-11	s ELECT 10uF 20% 35V
C604	1-126-096-11	s ELECT 10uF 20% 35V
C605	1-126-096-11	s ELECT 10uF 20% 35V
C702	1-126-923-11	s ELECT 22uF 20% 10V

NOTE: Please see page 7-10 for the parts that are not listed in the parts list.

PCM-E7700

(ADA-31 BOARD)

Ref. No.

or Q'ty Part No. SP Description

C802	1-126-096-11	s ELECT 10uF 20% 35V
C804	1-124-589-11	s ELECT 47uF 20% 16V
C805	1-124-589-11	s ELECT 47uF 20% 16V
C807	1-126-096-11	s ELECT 10uF 20% 35V
C809	1-124-589-11	s ELECT 47uF 20% 16V
C810	1-124-589-11	s ELECT 47uF 20% 16V
C930	1-126-096-11	s ELECT 10uF 20% 35V
C931	1-126-096-11	s ELECT 10uF 20% 35V
CN1	1-564-005-11	o CONNECTOR 6P, MALE
CN2	1-506-480-11	s CONNECTOR 15P, MALE
CN3	1-506-474-11	s CONNECTOR 9P, MALE
CN4	1-506-469-11	s CONNECTOR 4P, MALE
CN5	1-564-011-11	o CONNECTOR 12P, MALE
CP501	1-466-175-11	s FILTER UNIT, LOW-PASS
D1	8-719-028-74	s DIODE NSQ03A04
D2	8-719-028-74	s DIODE NSQ03A04
D3	8-719-028-74	s DIODE NSQ03A04
D4	8-719-028-74	s DIODE NSQ03A04
D6	8-719-941-23	s DIODE DA204U
D7	8-719-941-23	s DIODE DA204U
D8	8-719-210-33	s DIODE EC10DS2
D9	8-719-941-23	s DIODE DA204U
D10	8-719-941-23	s DIODE DA204U
D11	8-719-941-23	s DIODE DA204U
D12	8-719-941-23	s DIODE DA204U
D101	8-719-941-23	s DIODE DA204U
D102	8-719-941-23	s DIODE DA204U
D103	8-719-941-23	s DIODE DA204U
D104	8-719-941-23	s DIODE DA204U
D105	8-719-941-23	s DIODE DA204U
D106	8-719-941-23	s DIODE DA204U
D201	8-719-941-23	s DIODE DA204U
D202	8-719-941-23	s DIODE DA204U
D203	8-719-941-23	s DIODE DA204U
D204	8-719-941-23	s DIODE DA204U
D206	8-719-941-23	s DIODE DA204U
D207	8-719-941-23	s DIODE DA204U
D501	8-719-941-23	s DIODE DA204U
D502	8-719-941-23	s DIODE DA204U
D503	8-719-941-23	s DIODE DA204U
D504	8-719-941-23	s DIODE DA204U
D801	8-719-210-33	s DIODE EC10DS2
D901	8-719-210-33	s DIODE EC10DS2
D902	8-719-210-33	s DIODE EC10DS2
IC1	8-759-999-09	s IC CS5326-KP
IC2	8-759-701-84	s IC NJM7905FA
IC3	8-759-701-75	s IC NJM7805FA
IC4	8-759-701-59	s IC NJM78M09FA
IC5	8-759-701-87	s IC NJM7909FA
IC9	8-759-925-90	s IC SN74HC74NS
IC10	8-759-925-90	s IC SN74HC74NS
IC11	8-759-927-46	s IC SN74HC00NS
IC101	8-759-208-09	s IC TC4052BFHB
IC102	8-759-745-64	s IC NJM4560M
IC103	8-759-234-77	s IC TC4S66F
IC104	8-759-745-64	s IC NJM4560M
IC105	8-759-745-64	s IC NJM4560M
IC106	8-759-234-77	s IC TC4S66F

NOTE: For # marked in the parts list, refer to "SECTION 8 CHANGED PARTS".

(ADA-31 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
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IC201	8-759-208-09	s IC TC4052BFHB
IC202	8-759-745-64	s IC NJM4560M
IC203	8-759-234-77	s IC TC4S66F
IC204	8-759-745-64	s IC NJM4560M
IC205	8-759-745-64	s IC NJM4560M

IC206	8-759-234-77	s IC TC4S66F
IC301	8-759-998-22	s IC PCM56P
IC302	8-759-745-64	s IC NJM4560M
IC303	8-759-234-77	s IC TC4S66F
IC401	8-759-998-22	s IC PCM56P

IC402	8-759-745-64	s IC NJM4560M
IC403	8-759-234-77	s IC TC4S66F
IC501	8-759-700-45	s IC NJM4556M-A
IC502	8-759-745-64	s IC NJM4560M
IC503	8-759-701-02	s IC NJM2073M

IC701	8-759-973-71	s IC TL7705CPS-B
IC901	8-759-234-77	s IC TC4S66F
IC902	8-759-234-77	s IC TC4S66F

L4	1-410-482-31	s INDUCTOR 100uH
L5	1-410-482-31	s INDUCTOR 100uH
L6	1-410-482-31	s INDUCTOR 100uH
L502	1-410-482-31	s INDUCTOR 100uH
L503	1-410-482-31	s INDUCTOR 100uH

L801	1-412-533-21	s INDUCTOR 47UH
L802	1-412-533-21	s INDUCTOR 47UH

Q4	8-729-901-05	s TRANSISTOR DTA124EK
Q501	8-729-901-05	s TRANSISTOR DTA124EK
Q502	8-729-901-00	s TRANSISTOR DTC124EK
Q503	8-729-140-98	s TRANSISTOR 2SD773-3
Q504	8-729-901-05	s TRANSISTOR DTA124EK

Q505	8-729-901-00	s TRANSISTOR DTC124EK
Q801	8-729-901-05	s TRANSISTOR DTA124EK
Q802	8-729-901-00	s TRANSISTOR DTC124EK
Q803	8-729-901-05	s TRANSISTOR DTA124EK
Q804	8-729-901-00	s TRANSISTOR DTC124EK

Q805	8-729-901-00	s TRANSISTOR DTC124EK
Q806	8-729-901-05	s TRANSISTOR DTA124EK
Q807	8-729-901-05	s TRANSISTOR DTA124EK
Q808	8-729-901-00	s TRANSISTOR DTC124EK
Q809	8-729-140-98	s TRANSISTOR 2SD773-3

#Q901	8-729-901-00	s TRANSISTOR DTC124EK
#Q902	8-729-901-05	s TRANSISTOR DTA124EK

#R12	1-216-103-91	s METAL, CHIP 180K 5% 1/10W
#R13	1-216-295-00	s METAL, CHIP 0 5% 1/10W
#R137	1-216-107-00	s METAL, CHIP 270K 5% 1/10W
#R144	1-216-113-00	s METAL, CHIP 470K 5% 1/10W
#R146	1-216-121-00	s METAL, CHIP 1.0M 5% 1/10W

#R153	1-216-097-00	s METAL, CHIP 100K 5% 1/10W
#R237	1-216-107-00	s METAL, CHIP 270K 5% 1/10W
#R244	1-216-113-00	s METAL, CHIP 470K 5% 1/10W
#R246	1-216-121-00	s METAL, CHIP 1.0M 5% 1/10W
#R253	1-216-097-00	s METAL, CHIP 100K 5% 1/10W

#R414	1-216-073-00	s METAL, CHIP 10K 5% 1/10W
#R513	1-216-025-00	s METAL, CHIP 100 5% 1/10W
#R514	1-216-025-00	s METAL, CHIP 100 5% 1/10W
#R903	1-216-295-00	s METAL, CHIP 0 5% 1/10W
#R904	1-216-295-00	s METAL, CHIP 0 5% 1/10W

NOTE: Please see page 7-10 for the parts that are not listed in the parts list.

(ADA-31 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
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#R905	1-216-097-00	s METAL, CHIP 100K 5% 1/10W
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RV101	1-241-631-11	s RES, ADJ CARBON 22K
RV201	1-241-631-11	s RES, ADJ CARBON 22K
RV301	1-241-630-11	s RES, ADJ CARBON 10K
RV401	1-241-630-11	s RES, ADJ CARBON 10K
#RV901	1-241-628-11	s RES, ADJ CARBON 2.2K

#RV902	1-241-628-11	s RES, ADJ CARBON 2.2K
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RY501	1-515-716-11	s RELAY
RY502	1-515-716-11	s RELAY
RY801	1-515-716-11	s RELAY

NOTE: For # marked in the parts list, refer to "SECTION 8 CHANGED PARTS".

CP-233A BOARD (For UC, EK)

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-650-076-11	o PRINTED CIRCUIT BOARD, CP-233
C1	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
C2	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
C4	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
C5	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
CN1	1-564-005-11	o CONNECTOR 6P, MALE
CN2	1-565-284-11	o CONNECTOR, XLR 3P, FEMALE
CN3	1-565-284-11	o CONNECTOR, XLR 3P, FEMALE
CN4	1-565-284-11	o CONNECTOR, XLR 3P, FEMALE
CN5	1-564-002-11	s CONNECTOR 3P, MALE
FB1	1-412-694-11	s INDUCTOR, BEED
FB2	1-412-694-11	s INDUCTOR, BEED
FB11	1-412-694-11	s INDUCTOR, BEED
FB12	1-412-694-11	s INDUCTOR, BEED
FB13	1-412-694-11	s INDUCTOR, BEED
FB14	1-412-694-11	s INDUCTOR, BEED
FB15	1-412-694-11	s INDUCTOR, BEED
FB16	1-412-694-11	s INDUCTOR, BEED
FB21	1-412-694-11	s INDUCTOR, BEED
FB22	1-412-694-11	s INDUCTOR, BEED
FB23	1-412-694-11	s INDUCTOR, BEED
FB24	1-412-694-11	s INDUCTOR, BEED
FB25	1-412-694-11	s INDUCTOR, BEED
FB26	1-412-694-11	s INDUCTOR, BEED

CP-233B BOARD (For J)

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-650-076-11	o PRINTED CIRCUIT BOARD, CP-233
C1	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
C2	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
C4	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
C5	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
CN1	1-564-005-11	o CONNECTOR 6P, MALE
CN2	1-565-283-11	o CONNECTOR, XLR 3P, MALE
CN3	1-565-283-11	o CONNECTOR, XLR 3P, MALE
CN4	1-565-284-11	o CONNECTOR, XLR 3P, FEMALE
CN5	1-564-002-11	s CONNECTOR 3P, MALE
FB1	1-412-694-11	s INDUCTOR, BEED
FB2	1-412-694-11	s INDUCTOR, BEED
FB11	1-412-694-11	s INDUCTOR, BEED
FB12	1-412-694-11	s INDUCTOR, BEED
FB13	1-412-694-11	s INDUCTOR, BEED
FB14	1-412-694-11	s INDUCTOR, BEED
FB15	1-412-694-11	s INDUCTOR, BEED
FB16	1-412-694-11	s INDUCTOR, BEED
FB21	1-412-694-11	s INDUCTOR, BEED
FB22	1-412-694-11	s INDUCTOR, BEED
FB23	1-412-694-11	s INDUCTOR, BEED
FB24	1-412-694-11	s INDUCTOR, BEED
FB25	1-412-694-11	s INDUCTOR, BEED
FB26	1-412-694-11	s INDUCTOR, BEED

CP-234 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-650-077-11	o PRINTED CIRCUIT BOARD, CP-234
C1	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
C2	1-164-182-11	s CERAMIC, CHIP 3300pF 10% 100V
CN1	1-506-469-11	s CONNECTOR 4P, MALE
FB1	1-412-694-11	s INDUCTOR, BEED
FB2	1-412-694-11	s INDUCTOR, BEED
J1	1-562-999-41	s JACK, PIN 2P

NOTE: Please see page 7-10 for the parts that are not listed in the parts list.

NOTE: For # marked in the parts list, refer to "SECTION 8 CHANGED PARTS".

HP-57 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-650-075-11	o PRINTED CIRCUIT BOARD, HP-57
1pc	3-678-376-01	o BRACKET, JACK
1pc	7-682-903-01	s SCREW +PWH 3X5
FB1	1-412-694-11	s INDUCTOR, BEED
FB2	1-412-694-11	s INDUCTOR, BEED
FB3	1-412-694-11	s INDUCTOR, BEED
FB4	1-412-694-11	s INDUCTOR, BEED
J1	1-569-190-11	s JACK (LARGE TYPE)
RV1	1-241-331-11	s RES, VAR CARBON 10K/10K

KY-247 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-650-074-11	o PRINTED CIRCUIT BOARD, KY-247
1pc	4-928-315-81	s KEY TOP
S1	1-571-655-21	s SWITCH, PUSH(WITH LED)

LED-160 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-650-080-11	o PRINTED CIRCUIT BOARD, LED-160
D1	8-719-041-51	s LED GL1EG111, YELLOWISH GREEN

REEL FG BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-8276-769-A	o MOUNTED CIRCUIT BOARD, REEL FG (This assembly includes the following parts.)
1pc	1-648-983-11	o PRINTED CIRCUIT BOARD, REEL FG
C1	1-164-505-11	s CERAMIC 2.2uF 16V

RF-53 BOARD

Ref. No. or Q'ty	Part No.	SP Description
C102	1-164-845-11	s CERAMIC 5PF 5% 16V
C103	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C104	1-164-845-11	s CERAMIC 5PF 5% 16V
C105	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C107	1-164-874-11	s CERAMIC 100PF 5% 16V
C108	1-164-874-11	s CERAMIC 100PF 5% 16V
C111	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C112	1-162-921-11	s CERAMIC, CHIP 33PF 5% 50V
C113	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C114	1-162-921-11	s CERAMIC, CHIP 33PF 5% 50V
C115	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C116	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C117	1-164-937-11	s CERAMIC 0.001uF 10% 16V
C118	1-164-937-11	s CERAMIC 0.001uF 10% 16V
C119	1-164-874-11	s CERAMIC 100PF 5% 16V
C120	1-164-874-11	s CERAMIC 100PF 5% 16V
#C121	1-135-259-11	s TANTALUM, CHIP 10uF 20% 6.3V
C122	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C123	1-164-882-11	s CERAMIC 220PF 5% 16V
C124	1-164-940-11	s CERAMIC 0.0033uF 10% 16V
C125	1-164-882-11	s CERAMIC 220PF 5% 16V
C126	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C128	1-164-937-11	s CERAMIC 0.001uF 10% 16V
C129	1-164-935-11	s CERAMIC 470PF 10% 16V
C130	1-164-882-11	s CERAMIC 220PF 5% 16V
C131	1-164-874-11	s CERAMIC 100PF 5% 16V
C132	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C134	1-162-968-11	s CERAMIC, CHIP 0.0047uF 10% 50V
C136	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C137	1-164-882-11	s CERAMIC 220PF 5% 16V
C138	1-164-882-11	s CERAMIC 220PF 5% 16V
C139	1-162-964-11	s CERAMIC, CHIP 0.001uF 10% 50V
C202	1-164-845-11	s CERAMIC 5PF 5% 16V
C203	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C204	1-164-845-11	s CERAMIC 5PF 5% 16V
C205	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C207	1-164-874-11	s CERAMIC 100PF 5% 16V
C208	1-164-874-11	s CERAMIC 100PF 5% 16V
C211	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C212	1-162-921-11	s CERAMIC, CHIP 33PF 5% 50V
C213	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C214	1-162-921-11	s CERAMIC, CHIP 33PF 5% 50V
C215	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C216	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C217	1-164-937-11	s CERAMIC 0.001uF 10% 16V
C218	1-164-937-11	s CERAMIC 0.001uF 10% 16V
C219	1-164-874-11	s CERAMIC 100PF 5% 16V
C220	1-164-874-11	s CERAMIC 100PF 5% 16V
#C221	1-135-259-11	s TANTALUM, CHIP 10uF 20% 6.3V
C222	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C223	1-164-882-11	s CERAMIC 220PF 5% 16V
C224	1-164-940-11	s CERAMIC 0.0033uF 10% 16V
C225	1-164-882-11	s CERAMIC 220PF 5% 16V
C226	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C228	1-164-937-11	s CERAMIC 0.001uF 10% 16V
C229	1-164-935-11	s CERAMIC 470PF 10% 16V
C230	1-164-882-11	s CERAMIC 220PF 5% 16V
C231	1-164-874-11	s CERAMIC 100PF 5% 16V
C232	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V

NOTE: Please see page 7-10 for the parts that are not listed in the parts list.

NOTE: For # marked in the parts list, refer to "SECTION 8 CHANGED PARTS".

(RF-53 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
C234	1-162-968-11	s CERAMIC, CHIP 0.0047uF 10% 50V
C236	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C237	1-164-882-11	s CERAMIC 220PF 5% 16V
C238	1-164-882-11	s CERAMIC 220PF 5% 16V
C239	1-162-964-11	s CERAMIC, CHIP 0.001uF 10% 50V
C301	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C303	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C304	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
C307	1-164-004-11	s CERAMIC, CHIP 0.1uF 10% 25V
CN1	1-566-531-11	s CONNECTOR, FPC (ZIF) 15P
CN2	1-565-882-11	o CONNECTOR, 10P, MALE
CN3	1-566-534-11	s CONNECTOR, FPC (ZIF) 18P
IC101	8-752-039-01	s IC CXA1364R
IC201	8-752-039-01	s IC CXA1364R
IC301	8-759-064-36	s IC MB88346BPFV
L101	1-410-381-11	s INDUCTOR CHIP 10UH
L201	1-410-381-11	s INDUCTOR CHIP 10UH
L301	1-410-381-11	s INDUCTOR CHIP 10UH
Q101	8-729-102-08	s TRANSISTOR 2SC2223-T1F14
Q102	8-729-102-08	s TRANSISTOR 2SC2223-T1F14
Q103	8-729-901-00	s TRANSISTOR DTC124EK
Q104	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q105	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q106	8-729-216-21	s TRANSISTOR 2SA1162-Y
Q107	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q108	8-729-216-21	s TRANSISTOR 2SA1162-Y
Q109	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q110	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q201	8-729-102-08	s TRANSISTOR 2SC2223-T1F14
Q202	8-729-102-08	s TRANSISTOR 2SC2223-T1F14
Q203	8-729-901-00	s TRANSISTOR DTC124EK
Q204	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q205	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q206	8-729-216-21	s TRANSISTOR 2SA1162-Y
Q207	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q208	8-729-216-21	s TRANSISTOR 2SA1162-Y
Q209	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q210	8-729-230-49	s TRANSISTOR 2SC2712-YG
R101	1-216-837-11	s METAL, CHIP 22K 5% 1/16W
R102	1-216-797-11	s METAL, CHIP 10 5% 1/16W
R103	1-216-797-11	s METAL, CHIP 10 5% 1/16W
R104	1-216-837-11	s METAL, CHIP 22K 5% 1/16W
R105	1-216-833-11	s METAL, CHIP 10K 5% 1/16W
R106	1-216-812-11	s METAL, CHIP 180 5% 1/16W
R107	1-216-812-11	s METAL, CHIP 180 5% 1/16W
R108	1-216-833-11	s METAL, CHIP 10K 5% 1/16W
R109	1-216-834-11	s METAL, CHIP 12K 5% 1/16W
R110	1-218-973-11	s METAL 27K 5% 1/16W
R111	1-218-967-11	s METAL 15K 5% 1/16W
R112	1-218-967-11	s METAL 15K 5% 1/16W
R113	1-218-990-11	s METAL 0 5% 1/16W
R114	1-218-973-11	s METAL 47K 5% 1/16W
R115	1-218-990-11	s METAL 0 5% 1/16W
R116	1-218-967-11	s METAL 15K 5% 1/16W
R117	1-218-967-11	s METAL 15K 5% 1/16W
R118	1-218-952-11	s METAL 820 5% 1/16W
R119	1-218-961-11	s METAL 4.7K 5% 1/16W
R120	1-220-184-81	s METAL 1.3K 5% 16W

NOTE: Please see page 7-10 for the parts that are not listed in the parts list.

(RF-53 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
R121	1-218-961-11	s METAL 4.7K 5% 1/16W
R122	1-218-968-11	s METAL 18K 5% 1/16W
R123	1-218-968-11	s METAL 18K 5% 1/16W
R124	1-220-193-81	s METAL 7.5K 5% 16W
R125	1-220-193-81	s METAL 7.5K 5% 16W
R126	1-218-968-11	s METAL 18K 5% 1/16W
R127	1-220-193-81	s METAL 7.5K 5% 16W
R128	1-216-835-11	s METAL, CHIP 15K 5% 1/16W
R129	1-216-833-11	s METAL, CHIP 10K 5% 1/16W
R130	1-216-809-11	s METAL, CHIP 100 5% 1/16W
R131	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R132	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R133	1-216-830-11	s METAL, CHIP 5.6K 5% 1/16W
R134	1-216-830-11	s METAL, CHIP 5.6K 5% 1/16W
R135	1-216-791-11	s METAL, CHIP 3.3 5% 1/16W
R136	1-216-791-11	s METAL, CHIP 3.3 5% 1/16W
R137	1-216-827-11	s METAL, CHIP 3.3K 5% 1/16W
R138	1-216-827-11	s METAL, CHIP 3.3K 5% 1/16W
R139	1-216-827-11	s METAL, CHIP 3.3K 5% 1/16W
R140	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R201	1-216-837-11	s METAL, CHIP 22K 5% 1/16W
R202	1-216-797-11	s METAL, CHIP 10 5% 1/16W
R203	1-216-797-11	s METAL, CHIP 10 5% 1/16W
R204	1-216-837-11	s METAL, CHIP 22K 5% 1/16W
R205	1-216-833-11	s METAL, CHIP 10K 5% 1/16W
R206	1-216-812-11	s METAL, CHIP 180 5% 1/16W
R207	1-216-812-11	s METAL, CHIP 180 5% 1/16W
R208	1-216-833-11	s METAL, CHIP 10K 5% 1/16W
R209	1-216-834-11	s METAL, CHIP 12K 5% 1/16W
R210	1-218-973-11	s METAL 47K 5% 1/16W
R211	1-218-967-11	s METAL 15K 5% 1/16W
R212	1-218-967-11	s METAL 15K 5% 1/16W
R213	1-218-990-11	s METAL 0 5% 1/16W
R214	1-218-973-11	s METAL 47K 5% 1/16W
R215	1-218-990-11	s METAL 0 5% 1/16W
R216	1-218-967-11	s METAL 15K 5% 1/16W
R217	1-218-967-11	s METAL 15K 5% 1/16W
R218	1-218-952-11	s METAL 820 5% 1/16W
R219	1-218-961-11	s METAL 4.7K 5% 1/16W
R220	1-220-184-81	s METAL 1.3K 5% 16W
R221	1-218-961-11	s METAL 4.7K 5% 1/16W
R222	1-218-968-11	s METAL 18K 5% 1/16W
R223	1-218-968-11	s METAL 18K 5% 1/16W
R224	1-220-193-81	s METAL 7.5K 5% 16W
R225	1-220-193-81	s METAL 7.5K 5% 16W
R226	1-218-968-11	s METAL 18K 5% 1/16W
R227	1-220-193-81	s METAL 7.5K 5% 16W
R228	1-216-835-11	s METAL, CHIP 15K 5% 1/16W
R229	1-216-833-11	s METAL, CHIP 10K 5% 1/16W
R230	1-216-809-11	s METAL, CHIP 100 5% 1/16W
R231	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R232	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R233	1-216-830-11	s METAL, CHIP 5.6K 5% 1/16W
R234	1-216-830-11	s METAL, CHIP 5.6K 5% 1/16W
R235	1-216-791-11	s METAL, CHIP 3.3 5% 1/16W
R236	1-216-791-11	s METAL, CHIP 3.3 5% 1/16W
R237	1-216-827-11	s METAL, CHIP 3.3K 5% 1/16W
R238	1-216-827-11	s METAL, CHIP 3.3K 5% 1/16W
R239	1-216-827-11	s METAL, CHIP 3.3K 5% 1/16W

NOTE: For # marked in the parts list, refer to "SECTION 8 CHANGED PARTS".

(RF-53 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
R240	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R301	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R302	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R303	1-216-841-11	s METAL, CHIP 47K 5% 1/16W

SSP-8 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-8275-316-A	o MOUNTED CIRCUIT BOARD, SSP-8 (This assembly includes the following parts.)
1pc	1-563-180-11	o HOUSING, 6P
3pcs	4-924-029-11	s WASHER
BT101	1-528-229-11	o BATTERY, LITHIUM CR-2450
BZ101	1-529-025-00	s BUZZER
C102	1-136-165-00	s FILM 0.1uF 5% 50V
C104	1-126-157-11	s ELECT 10uF 20% 16V
C113	1-128-057-11	s ELECT 330uF 20% 6.3V
C118	1-125-447-11	s DOUBLE LAYERS 1FARAD 5.5V
C119	1-125-447-11	s DOUBLE LAYERS 1FARAD 5.5V
C136	1-126-160-11	s ELECT 1uF 20% 50V
C137	1-126-160-11	s ELECT 1uF 20% 50V
C139	1-126-160-11	s ELECT 1uF 20% 50V
C140	1-126-160-11	s ELECT 1uF 20% 50V
C156	1-126-157-11	s ELECT 10uF 20% 16V
C162	1-128-057-11	s ELECT 330uF 20% 6.3V
C164	1-126-940-11	s ELECT 330uF 20% 16V
#C175	1-163-133-00	s CERAMIC, CHIP 470pF 5% 50V
#C176	1-163-133-00	s CERAMIC, CHIP 470pF 5% 50V
#C177	1-163-133-00	s CERAMIC, CHIP 470pF 5% 50V
#C178	1-163-133-00	s CERAMIC, CHIP 470pF 5% 50V
#C179	1-163-133-00	s CERAMIC, CHIP 470pF 5% 50V
#C180	1-163-133-00	s CERAMIC, CHIP 470pF 5% 50V
#C181	1-163-133-00	s CERAMIC, CHIP 470pF 5% 50V
#C182	1-163-133-00	s CERAMIC, CHIP 470pF 5% 50V
#C183	1-163-133-00	s CERAMIC, CHIP 470pF 5% 50V
#C184	1-163-133-00	s CERAMIC, CHIP 470pF 5% 50V
#C185	1-163-133-00	s CERAMIC, CHIP 470pF 5% 50V
C305	1-128-057-11	s ELECT 330uF 20% 6.3V
C323	1-128-057-11	s ELECT 330uF 20% 6.3V
C505	1-128-057-11	s ELECT 330uF 20% 6.3V
C526	1-128-057-11	s ELECT 330uF 20% 6.3V
C701	1-126-160-11	s ELECT 1uF 20% 50V
C702	1-128-057-11	s ELECT 330uF 20% 6.3V
C703	1-126-940-11	s ELECT 330uF 20% 16V
C704	1-126-940-11	s ELECT 330uF 20% 16V
C705	1-128-057-11	s ELECT 330uF 20% 6.3V
C706	1-126-157-11	s ELECT 10uF 20% 16V
C707	1-126-160-11	s ELECT 1uF 20% 50V
C708	1-136-169-00	s MYLAR 0.22uF 5% 50V
C709	1-136-169-00	s MYLAR 0.22uF 5% 50V
C713	1-136-177-00	s FILM 1uF 5% 50V
C714	1-126-157-11	s ELECT 10uF 20% 16V
C715	1-164-346-11	s CERAMIC 1uF 16V
C721	1-128-057-11	s ELECT 330uF 20% 6.3V
C724	1-128-057-11	s ELECT 330uF 20% 6.3V
C728	1-128-057-11	s ELECT 330uF 20% 6.3V
#C729	1-163-038-00	s CERAMIC, CHIP 0.1uF 25V
C733	1-128-057-11	s ELECT 330uF 20% 6.3V
C736	1-128-057-11	s ELECT 330uF 20% 6.3V
C738	1-128-057-11	s ELECT 330uF 20% 6.3V
C742	1-128-057-11	s ELECT 330uF 20% 6.3V
C746	1-128-057-11	s ELECT 330uF 20% 6.3V
C751	1-128-057-11	s ELECT 330uF 20% 6.3V
#C765	1-163-038-00	s CERAMIC, CHIP 0.1uF 25V

NOTE: Please see page 7-10 for the parts that are not listed in the parts list.

NOTE: For # marked in the parts list, refer to "SECTION 8 CHANGED PARTS".

(SSP-8 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
C766	1-128-057-11 s	ELECT 330uF 20% 6.3V
#C767	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
#C768	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
#C769	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
#C770	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
#C771	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
#C772	1-128-057-11 s	ELECT 330uF 20% 6.3V
#C773	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
#C774	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
#C775	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
#C776	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
#C777	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
#C778	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
C902	1-128-057-11 s	ELECT 330uF 20% 6.3V
C904	1-128-057-11 s	ELECT 330uF 20% 6.3V
C908	1-128-057-11 s	ELECT 330uF 20% 6.3V
C910	1-128-057-11 s	ELECT 330uF 20% 6.3V
C912	1-128-057-11 s	ELECT 330uF 20% 6.3V
C914	1-128-057-11 s	ELECT 330uF 20% 6.3V
C916	1-128-057-11 s	ELECT 330uF 20% 6.3V
C918	1-128-057-11 s	ELECT 330uF 20% 6.3V
C922	1-128-057-11 s	ELECT 330uF 20% 6.3V
C924	1-128-057-11 s	ELECT 330uF 20% 6.3V
C926	1-128-057-11 s	ELECT 330uF 20% 6.3V
C928	1-128-057-11 s	ELECT 330uF 20% 6.3V
#C935	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
CN102	1-506-472-11 s	CONNECTOR 7P, MALE
CN103	1-506-683-11 s	CONNECTOR, PS 16P, MALE
CN104	1-564-001-11 o	CONNECTOR 2P, MALE
CN302	1-506-480-11 s	CONNECTOR 15P, MALE
CN701	1-508-797-00 o	PIN, CONNECTOR 4P
CN702	1-508-797-00 o	PIN, CONNECTOR 4P
CN703	1-508-797-00 o	PIN, CONNECTOR 4P
CN706	1-506-468-11 s	CONNECTOR 3P, MALE
CN709	1-506-474-11 s	CONNECTOR 9P, MALE
CN712	1-506-480-11 s	CONNECTOR 15P, MALE
CNI103	1-540-080-11 s	SOCKET, IC (IC113) 68P
#CNI112	1-526-662-21 o	SOCKET, IC 40P
CNI301	1-540-080-11 s	SOCKET, IC (IC113) 68P
#CNI307	1-526-662-21 o	SOCKET, IC 40P
CNI501	1-540-080-11 s	SOCKET, IC (IC113) 68P
#CNI509	1-526-662-21 o	SOCKET, IC 40P
CP101	1-577-171-11 s	CRYSTAL 16.00MHz
CP102	1-415-502-11 s	DELAY LINE 100nS
CP701	1-760-149-21 s	CRYSTAL 49.1520MHz
CP702	1-760-148-21 s	CRYSTAL 37.6320MHz
D101	8-719-028-74 s	DIODE NSQ03A04
D102	8-719-028-74 s	DIODE NSQ03A04
D103	8-719-028-74 s	DIODE NSQ03A04
D104	8-719-028-74 s	DIODE NSQ03A04
D105	8-719-028-74 s	DIODE NSQ03A04
D106	8-719-989-22 s	LED CL-150R-CD, RED
D107	8-719-989-22 s	LED CL-150R-CD, RED
D108	8-719-987-41 s	LED CL-150Y-CD, AMBER
D109	8-719-987-43 s	LED CL-150PG-CD, GRN
D701	8-719-911-19 s	DIODE 1SS119
D702	8-719-911-19 s	DIODE 1SS119

NOTE: Please see page 7-10 for the parts that are not listed in the parts list.

(SSP-8 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
D703	8-719-911-19 s	DIODE 1SS119
D704	8-719-911-19 s	DIODE 1SS119
#D705	8-719-941-84 s	DIODE DA204UT106
#D706	8-719-911-19 s	DIODE 1SS119
FB701	1-412-694-11 s	INDUCTOR BEAD
#FB702	1-412-694-11 s	INDUCTOR BEAD
IC101	8-759-925-74 s	IC TC74HC04NS
IC102	8-759-973-71 s	IC TL7705CPS-B
IC103	8-759-151-34 s	IC UPD70216L-10
IC104	8-759-170-54 s	IC CXD8830Q
IC105	8-759-929-77 s	IC SN74LS03NS
IC106	8-752-338-23 s	IC CXK581100TM-10LL
IC107	8-752-338-23 s	IC CXK581100TM-10LL
IC108	8-759-171-48 s	IC CXD8326Q
IC109	8-759-927-46 s	IC SN74HC00NS
IC110	8-759-973-43 s	IC MB8421-90LPFQ
IC111	8-759-510-88 s	IC MB8431-90LPFQ
IC112	8-759-266-56 o	IC 27C240-I112V1.01
IC114	8-759-926-06 s	IC SN74HC126NS
IC115	8-759-174-34 s	IC ST93CS56M1013TR
IC116	8-759-164-72 s	IC UPD71101GD-10-5BB
IC117	8-759-922-44 s	IC MSM5832RS
IC118	8-759-925-76 s	IC SN74HC08NS
IC119	8-759-925-90 s	IC SN74HC74NS
IC120	8-759-925-80 s	IC SN74HC14NS
IC121	8-759-166-98 s	IC LT1134CS-E1
IC122	8-759-926-82 s	IC SN74HC574ANS
IC123	8-759-926-82 s	IC SN74HC574ANS
IC124	8-759-925-85 s	IC SN74HC32NS
IC125	8-759-171-49 s	IC UPD72020GC-8-3B6
IC126	8-759-939-28 s	IC CXD1102Q
IC127	8-752-337-91 s	IC CXK58257ATM-70LL
IC128	8-752-337-91 s	IC CXK58257ATM-70LL
IC129	8-759-251-49 o	IC PALCE16V8Q-25JC-VIF
IC131	8-759-149-10 s	IC UPD4702G
IC132	8-759-948-58 s	IC 74F244SJ
IC133	8-759-500-05 s	IC MSM6338MS-K
IC134	8-759-926-77 s	IC SN74HC541NS
IC135	8-759-149-10 s	IC UPD4702G
IC136	8-759-149-10 s	IC UPD4702G
IC301	8-759-151-34 s	IC UPD70216L-10
IC302	8-759-170-54 s	IC CXD8830Q
IC303	8-759-926-12 s	IC SN74HC139NS
IC304	8-759-925-74 s	IC TC74HC04NS
IC305	8-752-337-91 s	IC CXK58257ATM-70LL
IC306	8-752-337-91 s	IC CXK58257ATM-70LL
IC307	8-759-254-70 s	IC 27C240-P307V1.00
IC308	8-759-925-72 s	IC SN74HC02NS
IC309	8-759-926-06 s	IC SN74HC126NS
IC310	8-759-149-09 s	IC UPD71059GB-10-3B4
IC311	8-759-149-07 s	IC UPD71054GB-10-3B4
IC312	8-759-925-85 s	IC SN74HC32NS
IC313	8-759-154-60 s	IC UPD71055GB-10-3B4
IC314	8-759-926-82 s	IC SN74HC574ANS
IC316	8-759-051-53 s	IC TD62381F
IC317	8-759-170-56 s	IC CXD8828Q
IC318	8-759-926-52 s	IC SN74HC257NS
IC319	8-759-925-90 s	IC SN74HC74NS

NOTE: For # marked in the parts list, refer to "SECTION 8 CHANGED PARTS".

(SSP-8 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
IC501	8-759-151-34	s IC UPD70216L-10
IC502	8-759-170-54	s IC CXD8830Q
IC503	8-759-925-82	s IC SN74HC21NS
IC504	8-759-925-74	s IC TC74HC04NS
IC505	8-759-973-43	s IC MB8421-90LPFQ
IC506	8-759-510-88	s IC MB8431-90LPFQ
IC507	8-752-337-91	s IC CXK58257ATM-70LL
IC508	8-752-337-91	s IC CXK58257ATM-70LL
IC509	8-759-254-68	s IC 27C210A-R509V1.00
IC510	8-759-925-72	s IC SN74HC02NS
IC511	8-759-926-06	s IC SN74HC126NS
IC512	8-759-149-09	s IC UPD71059GB-10-3B4
IC513	8-759-925-85	s IC SN74HC32NS
IC514	8-759-149-07	s IC UPD71054GB-10-3B4
IC515	8-759-926-82	s IC SN74HC574ANS
IC517	8-759-170-56	s IC CXD8828Q
IC701	8-759-708-05	s IC NJM78L05A
IC702	8-752-306-51	s IC CX23065A
IC703	8-759-923-65	s IC AM26LS31CNS
IC704	8-759-923-64	s IC AM26LS32ACNS
IC705	8-759-925-74	s IC TC74HC04NS
IC706	8-759-931-43	s IC SN74LS624NS
IC707	8-752-337-91	s IC CXK58257ATM-70LL
IC708	8-752-352-24	s IC CXD2605R
IC709	8-759-243-19	s IC TC7SU04F
#IC710	8-759-926-77	s IC SN74HC541NS
IC711	8-752-337-91	s IC CXK58257ATM-70LL
IC712	8-752-352-24	s IC CXD2605R
IC713	8-759-243-19	s IC TC7SU04F
IC714	8-752-337-91	s IC CXK58257ATM-70LL
IC715	8-752-352-24	s IC CXD2605R
IC716	8-759-243-19	s IC TC7SU04F
IC717	8-759-925-76	s IC SN74HC08NS
IC718	8-759-925-74	s IC TC74HC04NS
IC719	8-759-170-55	s IC CXD8829Q
IC720	8-759-925-90	s IC SN74HC74NS
IC721	8-759-925-90	s IC SN74HC74NS
IC722	8-759-925-90	s IC SN74HC74NS
IC723	8-759-926-24	s IC SN74HC164NS
IC724	8-759-926-24	s IC SN74HC164NS
IC725	8-759-926-24	s IC SN74HC164NS
IC726	8-759-926-24	s IC SN74HC164NS
IC727	8-759-926-24	s IC SN74HC164NS
IC728	8-759-926-26	s IC SN74HC166NS
IC729	8-759-926-26	s IC SN74HC166NS
IC730	8-759-926-26	s IC SN74HC166NS
IC731	8-759-926-26	s IC SN74HC166NS
#IC733	8-759-038-46	s IC SC7S00F
#IC735	8-759-925-90	s IC SN74HC74ANS
#IC736	8-759-927-46	s IC SN74HC00ANS
#IC737	8-759-925-90	s IC SN74HC74ANS
#IC738	8-759-927-46	s IC SN74HC00ANS
#IC739	8-759-927-46	s IC SN74HC00ANS
#IC740	8-759-925-76	s IC SN74HC08ANS
IC901	8-759-254-77	s IC CXD8864Q
IC902	8-759-043-71	s IC TMS44400-80SD
IC903	8-759-043-71	s IC TMS44400-80SD
IC904	8-759-043-71	s IC TMS44400-80SD
IC905	8-759-043-71	s IC TMS44400-80SD

NOTE: Please see page 7-10 for the parts that are not listed in the parts list.

(SSP-8 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
IC906	8-759-254-77	s IC CXD8864Q
IC907	8-759-043-71	s IC TMS44400-80SD
IC908	8-759-043-71	s IC TMS44400-80SD
IC909	8-759-043-71	s IC TMS44400-80SD
IC910	8-759-043-71	s IC TMS44400-80SD
IC911	8-752-343-18	s IC CXD2704Q
IC912	8-752-343-18	s IC CXD2704Q
IC913	8-752-343-18	s IC CXD2704Q
#IC914	8-759-279-59	s IC EPM7032-WECTL
L701	1-410-482-31	s INDUCTOR 100uH
L702	1-410-482-31	s INDUCTOR 100uH
L703	1-410-482-31	s INDUCTOR 100uH
L704	1-410-482-31	s INDUCTOR 100uH
L705	1-412-533-21	s INDUCTOR 47uH
#L706	1-412-533-21	s INDUCTOR 47uH
ND301	8-719-951-37	s LED LA-301VB, RED
ND501	8-719-951-37	s LED LA-301VB, RED
#R713	1-216-025-00	s METAL, CHIP 100 5% 1/10W
#R718	1-216-025-00	s METAL, CHIP 100 5% 1/10W
#R725	1-216-025-00	s METAL, CHIP 100 5% 1/10W
S102	1-692-535-11	s SWITCH, DI7P 8-CKT
T701	1-437-194-21	s TRANSFORMER, PULSE
X101	1-567-862-11	s CRYSTAL, 4.9152MHZ
X102	1-577-110-11	s CRYSTAL 20MHz
X103	1-567-098-00	s CRYSTAL 32.76800MHz
X301	1-577-110-11	s CRYSTAL 20MHz
X501	1-577-110-11	s CRYSTAL 20MHz
X701	1-567-815-11	s CRYSTAL 22.5792MHz

[DUS-746 BOARD]

Up to Serial No. J:10110, UC:20055, EK:50235

C1	1-163-038-00	s CERAMIC, CHIP 0.1uF 25V
IC1	8-759-279-59	s IC EPM7032-WECTL
R1	1-216-029-00	s METAL, CHIP 150 5% 1/10W
R2	1-216-029-00	s METAL, CHIP 150 5% 1/10W

[DUS-757 BOARD]

Up to Serial No. J:10110, UC:20055, EK:50235

IC1	8-759-925-90	s IC SN74HC74ANS
IC2	8-759-927-46	s IC SN74HC00ANS

NOTE: For # marked in the parts list, refer to "SECTION 8 CHANGED PARTS".

SV-147 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-8310-133-A	o MOUNTED CIRCUIT BOARD, SV-147 (This assembly includes the following parts.)
4pcs	3-374-740-01	s BRACKET, LED
C1	1-164-489-11	s CERAMIC, CHIP 0.22uF 10% 16V
C5	1-162-969-11	s CERAMIC, CHIP 0.0068uF 10% 25V
C7	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C8	1-164-227-11	s CERAMIC, CHIP 0.022uF 10% 25V
C9	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C10	1-162-965-11	s CERAMIC, CHIP 0.0015uF 10% 50V
C11	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C13	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C14	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C15	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C20	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C21	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C22	1-162-965-11	s CERAMIC, CHIP 0.0015uF 10% 50V
C23	1-162-965-11	s CERAMIC, CHIP 0.0015uF 10% 50V
C24	1-164-227-11	s CERAMIC, CHIP 0.022uF 10% 25V
C25	1-164-227-11	s CERAMIC, CHIP 0.022uF 10% 25V
C26	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C27	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C28	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C29	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C30	1-162-916-11	s CERAMIC, CHIP 12PF 5% 50V
C31	1-162-916-11	s CERAMIC, CHIP 12PF 5% 50V
C32	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C33	1-162-964-11	s CERAMIC, CHIP 0.001uF 10% 50V
C34	1-162-966-11	s CERAMIC, CHIP 0.0022uF 10% 50V
C35	1-164-227-11	s CERAMIC, CHIP 0.022uF 10% 25V
C36	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C38	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C39	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C40	1-128-397-21	s ELECT 100uF 20% 16V
C41	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C42	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C43	1-128-397-21	s ELECT 100uF 20% 16V
C44	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C45	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C47	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C48	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C49	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C52	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C53	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C54	1-128-397-21	s ELECT 100uF 20% 16V
C55	1-128-397-21	s ELECT 100uF 20% 16V
C56	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C57	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C58	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C59	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C60	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C61	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C62	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C63	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
#C64	1-162-968-11	s CERAMIC, CHIP 0.0047uF 10% 50V
#C65	1-135-259-11	s TANTALUM, CHIP 10 20% 6.3V
CN1	1-691-419-11	o HOUSING, 8P
CN2	1-566-532-11	s CONNECTOR, FPC 16P

NOTE: Please see page 7-10 for the parts that are not listed in the parts list.

(SV-147 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
CN3	1-566-195-11	o CONNECTOR, PIN 2P, MALE
CN4	1-566-526-11	s CONNECTOR, 10P
CN5	1-566-524-11	s CONNECTOR, FPC (ZIF) 8P
CN6	1-569-529-11	o HOUSING, 14P
CN7	1-506-479-11	s CONNECTOR 14P, MALE
CN8	1-566-534-11	s CONNECTOR, FPC (ZIF) 18P
CN10	1-566-526-11	s CONNECTOR, 10P
CN11	1-506-485-11	s CONNECTOR 6P, MALE
D1	8-719-016-38	s LED LN1351C6, GRN
D2	8-719-016-38	s LED LN1351C6, GRN
D3	8-719-016-38	s LED LN1351C6, GRN
D4	8-719-980-38	s DIODE SB07-03C
D5	8-719-980-38	s DIODE SB07-03C
D6	8-719-037-59	s LED LN210RP, RED
D7	8-719-037-60	s LED LN410YP, YEL
D8	8-719-018-39	s LED LN310GP, GRN
D9	8-719-037-60	s LED LN410YP, YEL
D10	8-719-400-18	s DIODE MA152WK
D11	8-719-400-18	s DIODE MA152WK
D12	8-719-400-18	s DIODE MA152WK
D13	8-719-400-18	s DIODE MA152WK
D14	8-719-980-38	s DIODE SB07-03C
D15	8-719-980-38	s DIODE SB07-03C
D16	8-719-400-18	s DIODE MA152WK
IC1	8-759-929-26	s IC TL431CPS
IC2	8-752-039-31	s IC CXA1418N
IC3	8-752-038-71	s IC CXA1127AM
#IC4	8-759-251-48	s IC UPC358GR-E1
IC5	8-759-925-90	s IC SN74HC74NS
IC6	8-759-925-90	s IC SN74HC74NS
IC7	8-759-927-29	s IC SN74HC04NS
IC8	8-759-926-77	s IC SN74HC541NS
IC9	8-752-854-07	s IC CXP87532-008Q
IC10	8-759-998-49	s IC MB3771PF
IC11	8-759-245-52	s IC TA7291F
IC12	8-759-551-68	s IC MGM80021FP
IC13	8-759-300-71	s IC HD14053BFP
IC14	8-759-926-06	s IC SN74HC126NS
IC15	8-759-823-87	s IC LB1638M
#IC16	8-759-251-48	s IC UPC358GR-E1
IC17	8-759-150-61	s IC UPC78L05T
IC18	8-759-150-61	s IC UPC78L05T
L1	1-410-381-11	s INDUCTOR CHIP 10UH
L2	1-410-381-11	s INDUCTOR CHIP 10UH
Q1	8-729-230-49	s TRANSISTOR 2SC2712-YG
Q2	8-729-140-75	s TRANSISTOR 2SD999
Q3	8-729-901-00	s TRANSISTOR DTC124EK
Q4	8-729-901-00	s TRANSISTOR DTC124EK
Q5	8-729-140-75	s TRANSISTOR 2SD999
Q6	8-729-140-75	s TRANSISTOR 2SD999
Q7	8-729-901-00	s TRANSISTOR DTC124EK
Q8	8-729-901-00	s TRANSISTOR DTC124EK
Q9	8-729-901-00	s TRANSISTOR DTC124EK
Q10	8-729-901-00	s TRANSISTOR DTC124EK
Q11	8-729-901-00	s TRANSISTOR DTC124EK
Q12	8-729-901-00	s TRANSISTOR DTC124EK
Q13	8-729-230-49	s TRANSISTOR 2SC2712-YG

NOTE: For # marked in the parts list, refer to "SECTION 8 CHANGED PARTS".

(SV-147 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
Q14	8-729-017-58 s	TRANSISTOR 2SB1323
Q15	8-729-140-75 s	TRANSISTOR 2SD999
Q16	8-729-901-00 s	TRANSISTOR DTC124EK
#Q17	8-729-901-00 s	TRANSISTOR DTC124EK
#Q18	8-729-901-00 s	TRANSISTOR DTC124EK
R1	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R2	1-218-736-11 s	METAL 68K 0.50% 1/16W
R3	1-218-736-11 s	METAL 68K 0.50% 1/16W
R4	1-216-635-11 s	METAL, CHIP 220 0.5% 1/10W
R5	1-216-635-11 s	METAL, CHIP 220 0.5% 1/10W
R6	1-216-853-11 s	METAL, CHIP 470K 5% 1/16W
R7	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R8	1-218-716-11 s	METAL 10K 0.50% 1/16W
R9	1-218-700-11 s	METAL 2.2K 0.50% 1/16W
R10	1-216-651-11 s	METAL, CHIP 1K 0.5% 1/10W
R11	1-218-698-11 s	METAL, CHIP 1.8K 0.50% 1/16W
R12	1-218-845-11 s	METAL 820 0.50% 1/16W
R13	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R14	1-216-651-11 s	METAL, CHIP 1K 0.5% 1/10W
R15	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R16	1-218-716-11 s	METAL 10K 0.50% 1/16W
R17	1-216-793-11 s	METAL, CHIP 4.7 5% 1/16W
R18	1-216-793-11 s	METAL, CHIP 4.7 5% 1/16W
R19	1-216-793-11 s	METAL, CHIP 4.7 5% 1/16W
R20	1-216-651-11 s	METAL, CHIP 1K 0.5% 1/10W
R21	1-216-635-11 s	METAL, CHIP 220 0.5% 1/10W
R22	1-216-635-11 s	METAL, CHIP 220 0.5% 1/10W
R23	1-216-651-11 s	METAL, CHIP 1K 0.5% 1/10W
R24	1-216-651-11 s	METAL, CHIP 1K 0.5% 1/10W
R25	1-218-716-11 s	METAL 10K 0.50% 1/16W
R26	1-218-716-11 s	METAL 10K 0.50% 1/16W
R27	1-218-716-11 s	METAL 10K 0.50% 1/16W
R28	1-218-716-11 s	METAL 10K 0.50% 1/16W
R29	1-216-635-11 s	METAL, CHIP 220 0.5% 1/10W
R30	1-218-716-11 s	METAL 10K 0.50% 1/16W
R31	1-218-716-11 s	METAL 10K 0.50% 1/16W
R32	1-216-635-11 s	METAL, CHIP 220 0.5% 1/10W
R33	1-216-635-11 s	METAL, CHIP 220 0.5% 1/10W
R34	1-216-635-11 s	METAL, CHIP 220 0.5% 1/10W
R35	1-216-857-11 s	METAL, CHIP 1M 5% 1/16W
R36	1-218-313-11 s	METAL, CHIP 560 1% 1/16W
R37	1-216-809-11 s	METAL, CHIP 100 5% 1/16W
R38	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R39	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R40	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R41	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R42	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R43	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R44	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R45	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R46	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R47	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R48	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R49	1-216-809-11 s	METAL, CHIP 100 5% 1/16W
R50	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R51	1-218-736-11 s	METAL 68K 0.50% 1/16W
R52	1-218-716-11 s	METAL 10K 0.50% 1/16W
R53	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R54	1-216-829-11 s	METAL, CHIP 4.7K 5% 1/16W

NOTE: Please see page 7-10 for the parts that are not listed in the parts list.

(SV-147 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
R55	1-218-716-11 s	METAL 10K 0.50% 1/16W
R56	1-218-706-11 s	METAL, CHIP 3.9K 0.50% 1/16W
R57	1-218-716-11 s	METAL 10K 0.50% 1/16W
R58	1-216-829-11 s	METAL, CHIP 4.7K 5% 1/16W
R59	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R60	1-218-700-11 s	METAL 2.2K 0.50% 1/16W
R61	1-218-736-11 s	METAL 68K 0.50% 1/16W
R62	1-218-700-11 s	METAL 2.2K 0.50% 1/16W
R63	1-218-700-11 s	METAL 2.2K 0.50% 1/16W
R64	1-218-716-11 s	METAL 10K 0.50% 1/16W
R65	1-218-716-11 s	METAL 10K 0.50% 1/16W
R66	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R67	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R68	1-218-698-11 s	METAL, CHIP 1.8K 0.50% 1/16W
R69	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R70	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R71	1-218-716-11 s	METAL 10K 0.50% 1/16W
R72	1-216-809-11 s	METAL, CHIP 100 5% 1/16W
R73	1-218-744-11 s	METAL 150K 0.50% 1/16W
R74	1-216-809-11 s	METAL, CHIP 100 5% 1/16W
R75	1-218-867-11 s	METAL 6.8K 0.50% 1/16W
R76	1-218-867-11 s	METAL 6.8K 0.50% 1/16W
R77	1-218-724-11 s	METAL 22K 0.50% 1/16W
R78	1-218-724-11 s	METAL 22K 0.50% 1/16W
R79	1-216-635-11 s	METAL, CHIP 220 0.5% 1/10W
R80	1-216-809-11 s	METAL, CHIP 100 5% 1/16W
R81	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R82	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R83	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R84	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R85	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R86	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R87	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R88	1-215-907-11 s	METAL 22 5% 3W
R89	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
#R90	1-216-837-11 s	METAL, CHIP 22K 5% 1/16W
S1	1-570-598-11 s	SWITCH, DIP 4-CKT
X1	1-579-962-21 s	CRYSTAL 22.5792MHz

[DUS-736 BOARD]

Up to Serial No. J:10110, UC:20055, EK:50235

C64	1-162-968-11 s	CERAMIC, CHIP 0.0047uF 10% 50V
C65	1-135-259-11 s	TANTALUM, CHIP 10 20% 6.3V
Q17	8-729-901-00 s	TRANSISTOR DTC124EK
Q18	8-729-901-00 s	TRANSISTOR DTC124EK
R90	1-216-837-11 s	METAL, CHIP 22K 5% 1/16W

NOTE: For # marked in the parts list, refer to "SECTION 8 CHANGED PARTS".

TENREGI BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-648-982-11	o PRINTED CIRCUIT BOARD, TENREGI
D1	8-719-821-03	s ELEMENT, HALL THS117

7-4. ACCESSORIES SUPPLIED

Ref. No. or Q'ty	Part No.	SP Description
1pc	△ 1-534-754-00	s CORD, POWER (For J)
1pc	△ 1-551-812-11	s CORD, POWER (For UC)
1pc	△ 1-590-910-11	s CORD, SET POWER (For EK)

VR-154 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-650-078-11	o PRINTED CIRCUIT BOARD, VR-154
S1	1-467-523-11	s ENCODER, ROTARY

VR-181 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-650-079-11	o PRINTED CIRCUIT BOARD, VR-181
S1	1-467-523-11	s ENCODER, ROTARY

FRAME

Ref. No. or Q'ty	Part No.	SP Description
1pc	△ 1-251-148-11	s INLET, AC (3P)
1pc	△ 1-413-647-11	s SWITCHING REGULATOR
1pc	1-466-954-11	s DISPLAY UNIT, EL
1pc	1-466-955-11	s ENCODER, ROTARY
1pc	1-467-524-11	o KEY BOARD UNIT
4pcs	1-500-082-11	s FILTER, CLAMP (FERRITE CORE)
1pc	1-532-827-11	s FUSE (MT4-3A-N1)
1pc	1-543-793-11	s FILTER, CLAMP (FERRITE CORE)
1pc	1-544-578-11	s SPEAKER
2pcs	△ 1-560-764-21	o CONTACT, FEMALE AWG18-24
1pc	△ 1-562-817-11	o HOUSING, CONNECTOR 2P
2pcs	△ 1-565-787-21	o CONTACT, RECEPTACLE 1P
1pc	1-570-028-11	s SWITCH, MICRO
1pc	△ 1-570-455-11	s SWITCH, AC POWER SEESAW
1pc	1-698-239-11	s MOTOR, DC FAN
1pc	1-952-582-11	o HARNESS, SUB (EL)

NOTE: Please see page 7-10 for the parts that are not listed in the parts list.

NOTE: For # marked in the parts list, refer to "SECTION 8 CHANGED PARTS".

SECTION 8 CHANGED PARTS

NOTE: The numbers identified by marking with) are matching with each serial numbers.

310) Serial No. 10066 and higher (For J)
Serial No. 20026 and higher (For UC)
Serial No. 50111 and higher (For EK)

311) Serial No. 10081 and higher (For J)
Serial No. 20036 and higher (For UC)
Serial No. 50156 and higher (For EK)

401) Serial No. 10111 and higher (For J)
Serial No. 20056 and higher (For UC)
Serial No. 50236 and higher (For EK)

ADA-31 BOARD

Ref.No. or Q'ty	Parts No.	SP Description
OLD) C101	1-164-085-00	s CERAMIC 0.001uF 10% 50V
401) C101	1-163-275-11	s CERAMIC, CHIP 0.001uF 5% 50V
OLD) C104	1-163-251-11	s CERAMIC, CHIP 100pF 5% 50V
401) -	DELETED	
OLD) C105	1-164-085-00	s CERAMIC 0.001uF 10% 50V
401) C105	1-163-275-11	s CERAMIC, CHIP 0.001uF 5% 50V
OLD) C107	1-163-239-11	s CERAMIC, CHIP 33pF 5% 50V
401) -	DELETED	
OLD) C201	1-164-085-00	s CERAMIC 0.001uF 10% 50V
401) C201	1-163-275-11	s CERAMIC, CHIP 0.001uF 5% 50V
OLD) C204	1-163-251-11	s CERAMIC, CHIP 100pF 5% 50V
401) -	DELETED	
OLD) C205	1-164-085-00	s CERAMIC 0.001uF 10% 50V
401) C205	1-163-275-11	s CERAMIC, CHIP 0.001uF 5% 50V
OLD) C207	1-163-239-11	s CERAMIC, CHIP 33pF 5% 50V
401) -	DELETED	
OLD) C312	1-164-085-00	s CERAMIC 0.001uF 10% 50V
401) C312	1-163-275-11	s CERAMIC, CHIP 0.001uF 5% 50V
OLD) C412	1-164-085-00	s CERAMIC 0.001uF 10% 50V
401) C412	1-163-275-11	s CERAMIC, CHIP 0.001uF 5% 50V
OLD) C515	1-126-157-11	s ELECT 10uF 20% 16V
401) C515	1-124-261-00	s ELECT 10uF 20% 50V
OLD) -	NOT USED	
401) IC901	8-759-234-77	s IC TC4S66F
OLD) -	NOT USED	
401) IC902	8-759-234-77	s IC TC4S66F
OLD) -	NOT USED	
401) Q901	8-729-901-00	s TRANSISTOR DTC124EK
OLD) -	NOT USED	
401) Q902	8-729-901-05	s TRANSISTOR DTA124EK
OLD) R12	1-216-103-91	s METAL, CHIP 180K 5% 1/10W
311) -	DELETED	
OLD) R13	1-216-071-00	s METAL, CHIP 8.2K 5% 1/10W
311) R13	1-216-295-00	s METAL, CHIP 0 5% 1/10W
401) -	DELETED	
OLD) R137	1-216-107-00	s METAL, CHIP 270K 5% 1/10W
311) -	DELETED	

(ADA-31 BOARD)

Ref.No. or Q'ty	Parts No.	SP Description
OLD) R144	1-216-121-00	s METAL, CHIP 1.0M 5% 1/10W
311) R144	1-216-113-00	s METAL, CHIP 470K 5% 1/10W
OLD) -	NOT USED	
401) R146	1-216-121-00	s METAL, CHIP 1.0M 5% 1/10W
OLD) -	NOT USED	
401) R153	1-216-097-00	s METAL, CHIP 100K 5% 1/10W
OLD) R237	1-216-107-00	s METAL, CHIP 270K 5% 1/10W
311) -	DELETED	
OLD) R244	1-216-121-00	s METAL, CHIP 1.0M 5% 1/10W
311) R244	1-216-113-00	s METAL, CHIP 470K 5% 1/10W
OLD) -	NOT USED	
401) R246	1-216-121-00	s METAL, CHIP 1.0M 5% 1/10W
OLD) -	NOT USED	
401) R253	1-216-097-00	s METAL, CHIP 100K 5% 1/10W
OLD) R414	1-216-077-00	s METAL, CHIP 15K 5% 1/10W
401) R414	1-216-073-00	s METAL, CHIP 10K 5% 1/10W
OLD) R513	1-216-009-00	s METAL, CHIP 22 5% 1/10W
401) R513	1-216-025-00	s METAL, CHIP 100 5% 1/10W
OLD) R514	1-216-009-00	s METAL, CHIP 22 5% 1/10W
401) R514	1-216-025-00	s METAL, CHIP 100 5% 1/10W
OLD) -	NOT USED	
401) R903	1-216-295-00	s METAL, CHIP 0 5% 1/10W
OLD) -	NOT USED	
401) R904	1-216-295-00	s METAL, CHIP 0 5% 1/10W
OLD) -	NOT USED	
401) R905	1-216-097-00	s METAL, CHIP 100K 5% 1/10W
OLD) -	NOT USED	
401) RV901	1-241-628-11	s RES, ADJ CARBON 2.2K
OLD) -	NOT USED	
401) RV902	1-241-628-11	s RES, ADJ CARBON 2.2K

RF-53 BOARD

Ref.No. or Q'ty	Parts No.	SP Description
OLD) C121	1-164-004-11 s	CERAMIC, CHIP 0.1uF 10% 25V
401) C121	1-135-259-11 s	TANTALUM, CHIP 10uF 20% 6.3V
OLD) C221	1-164-004-11 s	CERAMIC, CHIP 0.1uF 10% 25V
401) C221	1-135-259-11 s	TANTALUM, CHIP 10uF 20% 6.3V

SSP-8 BOARD

Ref.No. or Q'ty	Parts No.	SP Description
OLD) C175	1-164-081-11 s	CERAMIC 470pF 10% 50V
401) C175	1-163-133-00 s	CERAMIC, CHIP 470pF 5% 50V
OLD) C176	1-164-081-11 s	CERAMIC 470pF 10% 50V
401) C176	1-163-133-00 s	CERAMIC, CHIP 470pF 5% 50V
OLD) C177	1-164-081-11 s	CERAMIC 470pF 10% 50V
401) C177	1-163-133-00 s	CERAMIC, CHIP 470pF 5% 50V
OLD) C178	1-164-081-11 s	CERAMIC 470pF 10% 50V
401) C178	1-163-133-00 s	CERAMIC, CHIP 470pF 5% 50V
OLD) C179	1-164-081-11 s	CERAMIC 470pF 10% 50V
401) C179	1-163-133-00 s	CERAMIC, CHIP 470pF 5% 50V
OLD) C180	1-164-081-11 s	CERAMIC 470pF 10% 50V
401) C180	1-163-133-00 s	CERAMIC, CHIP 470pF 5% 50V
OLD) C181	1-164-081-11 s	CERAMIC 470pF 10% 50V
401) C181	1-163-133-00 s	CERAMIC, CHIP 470pF 5% 50V
OLD) C182	1-164-081-11 s	CERAMIC 470pF 10% 50V
401) C182	1-163-133-00 s	CERAMIC, CHIP 470pF 5% 50V
OLD) C183	1-164-081-11 s	CERAMIC 470pF 10% 50V
401) C183	1-163-133-00 s	CERAMIC, CHIP 470pF 5% 50V
OLD) C184	1-164-081-11 s	CERAMIC 470pF 10% 50V
401) C184	1-163-133-00 s	CERAMIC, CHIP 470pF 5% 50V
OLD) C185	1-164-081-11 s	CERAMIC 470pF 10% 50V
401) C185	1-163-133-00 s	CERAMIC, CHIP 470pF 5% 50V
OLD) C729	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
401) -		DELETED
OLD) C765	1-164-096-11 s	CERAMIC 0.01uF 50V
401) C765	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
OLD) C767	1-162-806-11 s	CERAMIC 0.1uF 10% 50V
401) C767	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
OLD) C768	1-162-806-11 s	CERAMIC 0.1uF 10% 50V
401) C768	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
OLD) C769	1-162-806-11 s	CERAMIC 0.1uF 10% 50V
401) C769	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
OLD) C770	1-162-806-11 s	CERAMIC 0.1uF 10% 50V
401) C770	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
OLD) -		NOT USED
401) C771	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
OLD) -		NOT USED
401) C772	1-128-057-11 s	ELECT 330uF 20% 6.3V
OLD) -		NOT USED
401) C773	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V

(SSP-8 BOARD)

Ref.No. or Q'ty	Parts No.	SP Description
OLD) -		NOT USED
401) C774	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
OLD) -		NOT USED
401) C775	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
OLD) -		NOT USED
401) C776	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
OLD) -		NOT USED
401) C777	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
OLD) -		NOT USED
401) C778	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
OLD) -		NOT USED
401) C935	1-163-038-00 s	CERAMIC, CHIP 0.1uF 25V
OLD) CNI112	1-251-103-11 o	SOCKET, IC 40P
310) CNI112	1-526-662-21 o	SOCKET, IC 40P
OLD) CNI307	1-251-103-11 o	SOCKET, IC 40P
310) CNI307	1-526-662-21 o	SOCKET, IC 40P
OLD) CNI509	1-251-103-11 o	SOCKET, IC 40P
310) CNI509	1-526-662-21 o	SOCKET, IC 40P
OLD) D705	8-719-911-19 s	DIODE 1SS119
401) D705	8-719-941-84 s	DIODE DA204UT106
OLD) D706	8-719-911-19 s	DIODE 1SS119
401) -		DELETED
OLD) -		NOT USED
401) FB702	1-412-694-11 s	INDUCTOR BEAD
OLD) IC710	8-759-926-77 s	IC SN74HC541ANS
401) -		DELETED
OLD) IC733	8-759-038-46 s	IC SC7S00F
401) -		DELETED
OLD) -		NOT USED
401) IC735	8-759-925-90 s	IC SN74HC74ANS
OLD) -		NOT USED
401) IC736	8-759-927-46 s	IC SN74HC00ANS
OLD) -		NOT USED
401) IC737	8-759-925-90 s	IC SN74HC74ANS
OLD) -		NOT USED
401) IC738	8-759-927-46 s	IC SN74HC00ANS
OLD) -		NOT USED
401) IC739	8-759-927-46 s	IC SN74HC00ANS
OLD) -		NOT USED
401) IC740	8-759-925-76 s	IC SN74HC08ANS
OLD) -		NOT USED
401) IC914	8-759-279-59 s	IC EPM7032-WECTL
OLD) -		NOT USED
401) L706	1-412-533-21 s	INDUCTOR 47uH
OLD) R713	1-216-009-00 s	METAL, CHIP 22 5% 1/10W
401) R713	1-216-025-00 s	METAL, CHIP 100 5% 1/10W
OLD) R718	1-216-009-00 s	METAL, CHIP 22 5% 1/10W
401) R718	1-216-025-00 s	METAL, CHIP 100 5% 1/10W
OLD) R725	1-216-009-00 s	METAL, CHIP 22 5% 1/10W
401) R725	1-216-025-00 s	METAL, CHIP 100 5% 1/10W

SV-147 BOARD

Ref.No. or Q'ty	Parts No.	SP Description
OLD) -		NOT USED
401) C64	1-162-968-11 s	CERAMIC, CHIP 0.0047uF 10% 50V
OLD) -		NOT USED
401) C65	1-135-259-11 s	TANTALUM, CHIP 10 20% 6.3V
OLD) IC4	8-759-100-94 s	IC UPC358G2
311) IC4	8-759-251-48 s	IC UPC358GR-E1
OLD) IC16	8-759-100-94 s	IC UPC358G2
311) IC16	8-759-251-48 s	IC UPC358GR-E1
OLD) -		NOT USED
401) Q17	8-729-901-00 s	TRANSISTOR DTC124EK
OLD) -		NOT USED
401) Q18	8-729-901-00 s	TRANSISTOR DTC124EK
OLD) -		NOT USED
401) R90	1-216-837-11 s	METAL, CHIP 22K 5% 1/16W